TELEPHONE and Management ENGINEER

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vol 57 #8.

AUGUST
1955

THE NATIONAL TELEPHONE MAGAZINE

Featuring in This Issue—

★ FRONT COVER STORY ON NEW USITA EMBLEM, Pages 4 and 18
★ EDITORIAL — "GREETINGS TO NEW EMBLEM, Page 41
★ OUR MAJOR CHALLENGE, *by George E. Brewer*
★ MODERN CABLE CONSTRUCTION, *by John S. Reed*
★ GUIDE FOR TRAINING TRAFFIC EMPLOYES, *by Ruth E. Richards*

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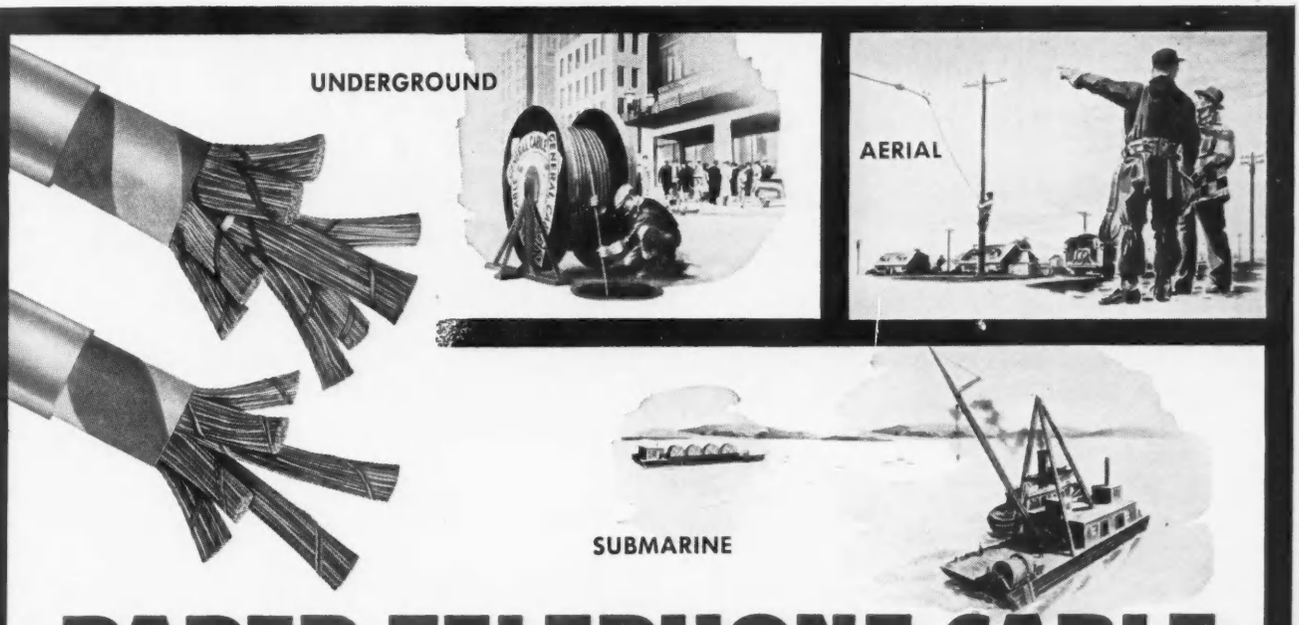

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Before you order Paper Telephone Cable . . . pause and consider the significance of these **Facts:** For over 50 years General Cable has been the prime supplier of paper telephone cables to the independent telephone companies.

Many billions of paired feet of our paper telephone cable are currently giving users the highest level of performance . . . for aerial, underground and submarine installations.

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Aerial and underground duct service . . . *paper insulated with lead sheath.*

Direct earth burial . . . *paper insulated, lead sheath, with jute or steel tape armor and jute.*

Submarine installation . . . *paper insulated, lead sheath, with round steel wire armor and jute.*

All the above types are manufactured in smaller number of pairs with concentric constructions and the larger number of pairs with unit construction. Composite and quaded constructions are available, too.

For information and service see our national distributors:

AUTOMATIC ELECTRIC SALES CORPORATION, 1033 W. Van Buren St., Chicago 7, Illinois

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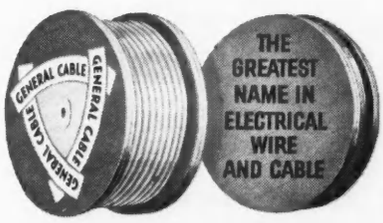

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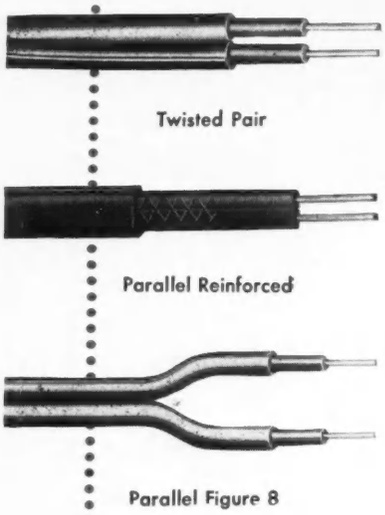
Drop Wires



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TELEPHONE and Management ENGINEER

A Telephone Engineer Publication

AUGUST 1955
Vol. 59 No. 8

The National Telephone Magazine

Editor, RAY W. SMITH • *Advertising Director*, ROY F. SMITH
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ARTICLES

Editorial — "Greetings To A New Emblem"		41
Our Major Challenge	George E. Brewer	45
Training Traffic Employes (Part V)	Ruth E. Richards	56
Modern Cable Construction (Part V-C)	John S. Reed	63

FEATURES

Coming Conventions		6
Across The Editor's Desk		6
Telephone Engineer Newsletter		9
Industry News Briefs		12
Washington Bureau Reports		22
Tele-Views		32
Telephone Association Activities		68
Questions & Answers	Jay G. Mitchell	54
Suppliers' News Briefs		76

DEPARTMENTS

Professional Advertising	86
New Products' Showcase	88
Buyers' Guide	88
Classified Advertising	90
Advertisers' Index	101

FRONT COVER

CARL D. BROREIN, left, chairman of the special Task Force committee on National Advertising, looks over the new U.S.I.T.A. emblem with J. HARTWELL JONES, immediate past chairman of the Advertising Committee. The Task Force carried through completion and adoption of the design by U.S.I.T.A.'s board of directors, after the suggestion was made by the Advertising Committee early in 1954.

The new emblem will appear each month in some five million copies of every national advertisement. This provides an impact never before accomplishd by any Independent insignia. Member companies are being urged to take advantage of the recognition-factor by using the design in all possible local tie-ins. Without the word's "United States" and "Telephone Association," the emblem is suitable for ad signatures, pay station signs, truck identification, and many other ways in connection with individual company names.

Volume 59, No. 8. Published monthly by TELEPHONE ENGINEER PUBLISHING CORP. Office of Publication, Rochelle, Ill. Executive and Editorial Office, 7720 Sheridan Road, Chicago, Ill. Telephone — Rogers Park 4-3040. Subscriptions: U. S., and Possessions, $3.00 per year; Canada $3.50; in all other countries, $5.50. Single copies, U.S.A., 35 cents. Entered as second class matter at the post office at Rochell, Ill. under the act of March 3, 1879. Copyright 1955 by Telephone Engineer Publishing Corp.

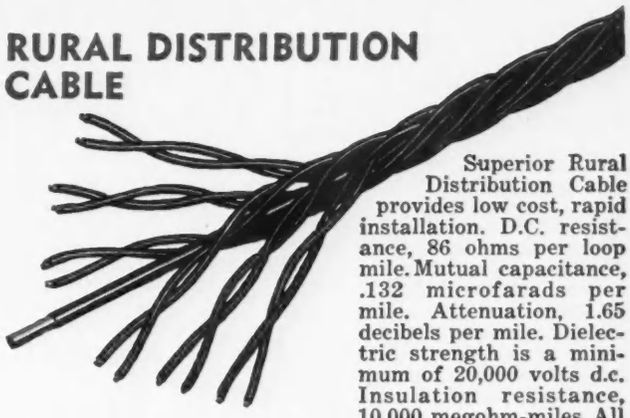
SUPERIOR CABLES

Better communication cables . . . completely insulated and sheathed in modern plastics!

TELEPHONE CABLE

Superior Telephone Cable costs less to install and maintain. Insulation resistance is greater than 1000 megohm miles. Very high voltage breakdown (approximately 1000 volts per mil) reduces circuit failures from lightning surges. Dielectric strength is a minimum of 10,000 volt d.c. Very low capacitance unbalance. Resists moisture, ozone, acids and alkalis. More than meets the rigid requirements for both aerial and direct burial installations.

RURAL DISTRIBUTION CABLE

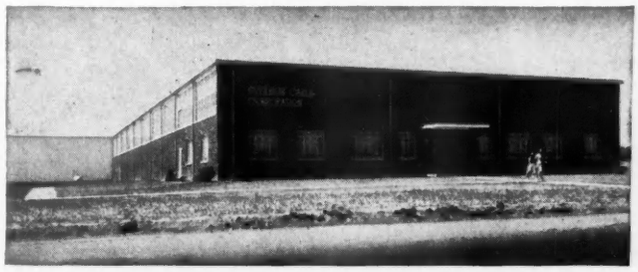


Superior Rural Distribution Cable provides low cost, rapid installation. D.C. resistance, 86 ohms per loop mile. Mutual capacitance, .132 microfarads per mile. Attenuation, 1.65 decibels per mile. Dielectric strength is a minimum of 20,000 volts d.c. Insulation resistance, 10,000 megohm-miles. All conductors are 19 gauge soft drawn copper wire for better transmission. Unlike pair twists control crosstalk. Extra high strength support wire (.109 dia., 1800 lbs.) makes longer spans possible. All six pairs of small diameter, lightweight conductors with double raised ridge or color-coded tracers are readily accessible for simpler splicing.

Superior's "CUSTOM-MADE" Cables

Superior Cable of the following types can be made to your specifications:

- **Multi-conductor RDC**
- **Composite Quadded Telephone Cable**
- **Self-supporting Cable**
- **Inter-communication Cable**
- **Direct Burial Cable**



Buy Superior Cable from SUPERIOR CABLE!

This modern plant at Hickory, North Carolina is the home of SUPERIOR CABLE CORPORATION

All SUPERIOR Cables are completely sheathed and insulated in the modern plastics, polyethylene or plasticized polyvinyl chloride. These modern products of the test tube have been proven to be better electrically, chemically and physically, than other insulating and jacketing materials.

SUPERIOR Cables are the result of exhaustive research and development and the application of advanced engineering techniques to the most modern production methods.

All SUPERIOR CABLE is factory-tested and is fully guaranteed to be satisfactory in design, materials and workmanship.

Superior's "Super-Splice" makes splices waterproof and moisture-proof from inside out. This plastic device is filled at the factory with a positive sealing agent which maintains the same consistency at both very high and very low temperatures. "Super-Splice" has been subjected to exhaustive underwater tests and is proven to make the individual conductor splice permanently as good as the cable . . . from inside out.

For detailed information, write, wire or phone

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION, HICKORY, N. C.

coming CONVENTIONS

Michigan Independent Telephone Association, Pantlind Hotel, Grand Rapids, September, 8 and 9.

Rocky Mountain Telephone Association, Utah Hotel, Salt Lake City, Utah, September 15 and 16.

Arkansas Telephone Association, Arlington Hotel, Hot Springs, September 26 and 27.

United States Independent Telephone Association, National Convention, Conrad Hilton Hotel, Chicago, October 10, 11 and 12.

North Carolina Independent Telephone Association, Carolina Hotel, Pinehurst, October 17 and 18.

Virginia-West Virginia Independent Telephone Associations, Roanoke Hotel, Roanoke, October 20 and 21.

Oklahoma Telephone Association, Huckins Hotel, Oklahoma City, October 20 and 21.

South Carolina Telephone Association, Clemson House, Clemson, October 24 and 25.

Alabama-Mississippi Telephone Associations, Thomas Jefferson Hotel, Birmingham, Ala., November 14 and 15.

Georgia Telephone Association, De Soto Hotel, Savannah, November 17 and 18.

Florida Telephone Association, Hotel Daytona Plaza, Daytona Beach, November 21 and 22.

Kentucky Independent Telephone Association, Phoenix Hotel, Lexington, March 6, 1956.

ACROSS THE EDITOR'S DESK

Pioneers To Meet Oct. 12

JAMES PFAENDER, chairman of the *Entertainment & Program Committee* of the *Independent Telephone Pioneer Association*, has already announced the program of his Committee for the annual meeting to be held during the National Convention on Oct. 12. Two of the outstanding musical acts on the American stage will be the highlight of the Pioneer meeting. One of these groups is outstanding in Europe. Our coming issues will give you more details of the program. We will issue our regular Pre-Convention issue as the October 1 issue of FORTNIGHTLY TELEPHONE ENGINEER and will carry pictures of what to see and hear during this important meeting.

■ ■ ■

New U.S.I.T.A. Emblem

TURN BACK to our front cover again and familiarize yourself with the new emblem of the *U. S. Independent Telephone Association*. Then read the story of the picture (page 4), a story of the emblem is on page 18 of this issue — then perchance you might read our Editorial (page 41) on this same subject. Yes sir, we are hoping to aid the industry in introducing our new emblem and hope too that you telephone people make it known to every one of your subscribers. It will appear in all future industry advertisements appearing in the national magazines including the telephone industry journal. One of these advertisements appears on page 67 of this issue.

■ ■ ■

Toll Compensation

ON PAGE 9 you will read of the outstanding work now being done by the *U.S.I.T.A. Toll Compensation Committee*. The Subcommittee on Message Toll Compensation headed by *Arthur W. Lambert* and the Separation Subcommittee chairmanned by *Ralph W. Shriner* are in the home stretch on their studies for the industry with a deadline of *August* 31. This study can mean dollar and cents to the Independent industry and these gentlemen are to be congratulated on their service to you and all Independents. The Toll Compensation Committee is headed by *W. Roy Jarmon*.

■ ■ ■

Mrs. Alma Boylan Dies

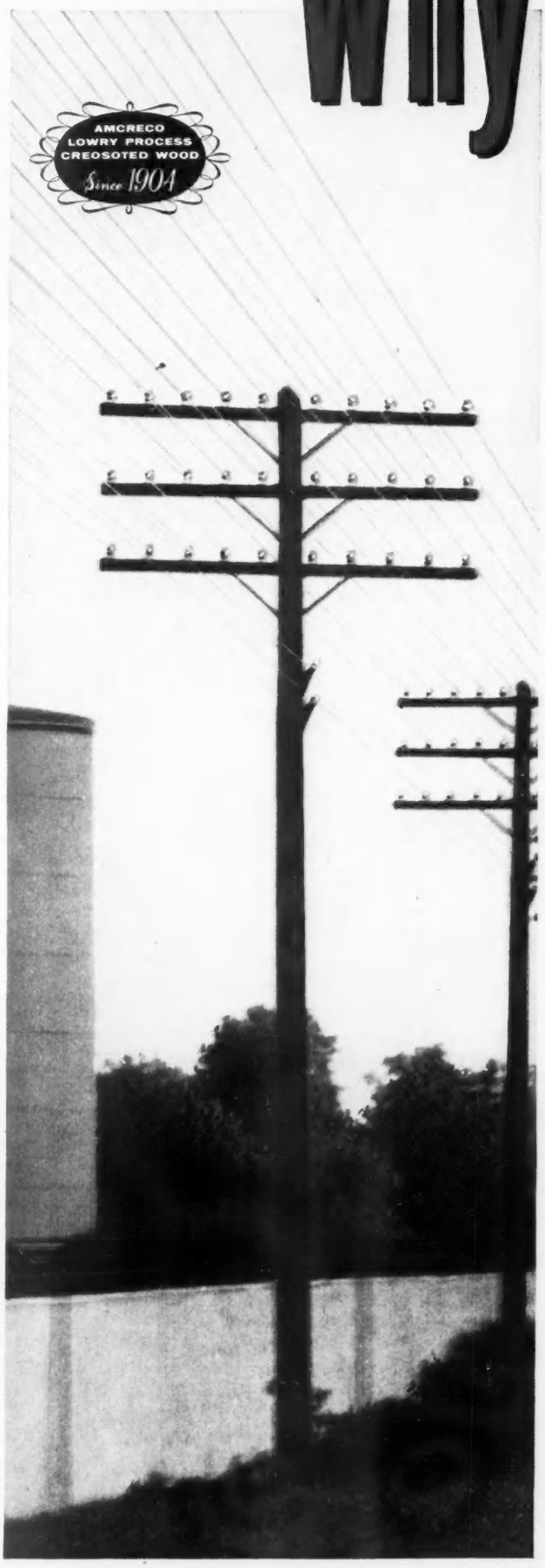
THE INDEPENDENT telephone industry was saddened recently when the announcement was issued on the passing of *Mrs. Alma Boylan*, wife of the well known chairman of the Rochester (N. Y.) Telephone Corp., *John P. Boylan*. His Excellency Bishop Kearney imparted the absolution and His Excellency Auxiliary Bishop Case celebrated the funeral mass. Mr. Boylan, an outstanding layman of Sacred Heart Cathedral, is vice president of the Catholic Courier Journal and well known to readers of this magazine for his series titled "Tales of the Nineties."

■ ■ ■

Morris LaCroix Dies

ON JULY 28 we received word of the passing of *Morris F. LaCroix*, chairman of the board of the General Telephone Corp. since its incorporation in 1935. Mr. LaCroix was one of the outstanding industrialists of our country and his success with the General Telephone Corp. is only one of the many industrial enterprises he either headed or served as a member of the board. He was a director of the IT&T company. His warm personality was well known to the writer and editor of this publication and we mourn his passing with the industry.

Why do you invest money in treated woods?



The basic reason why you invest money in treated poles, cross arms, conduit and other construction woods is because they last longer. You know that every dollar spent on properly treated wood products will save you many, many dollars later on in pole renewals, cross arm replacement and other repair and maintenance work.

The first question that you must ask yourself when investing in treated woods is, "Just how much will this particular preservative or process increase the service life of our wood?"

With Amcreco Creosoted Products, that question has been answered. Wood, pressure treated with creosote by Amcreco, lasts for years and years with great strength throughout the life of the wood, and with high resistance to fungi, borers, insects and all natural enemies of wood.

Write our nearest office for estimates or quotations on treated poles, cross arms, conduit, timbers and other construction woods. We would appreciate an opportunity to quote on your needs.

AMERICAN CREOSOTING COMPANY

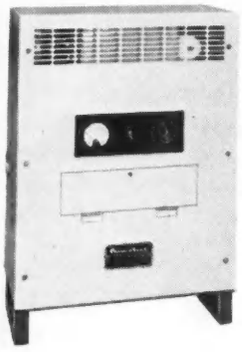
Shreveport Creosoting Company
Colonial Creosoting Company
Federal Creosoting Company
Indiana Creosoting Company

AMCRECO
LOWRY PROCESS
CREOSOTED WOOD

Georgia Forest Products Company
Gulf States Creosoting Company
Georgia Creosoting Company
Kettle River Company

LOUISVILLE 2, KENTUCKY
18 FIELD SALES OFFICES TO SERVE YOU

Smoother, quieter power —on the way!



As each new development in Automatic's power equipment reaches the laboratory testing stage, its output is checked both by oscilloscope and by actual listening. This is just one step in Automatic's constant research, aimed at bringing you smoother, quieter, more dependable power. It's one decisive reason why so many successful companies insist on . . .

Automatic's Power Equipment

Convotrol Battery Charger—A constant-voltage, fully-automatic 50-volt charger (for 22 to 26 cells). Three sizes: 3, 6, 12 amperes. Operates on 115 or 230 volts, 1-phase AC 50 to 60 cycles. Two or more Convotrols can be paralleled for greater output. Ask for Circular TM1623.

Type 46 Battery Charger—A constant-current 50-volt charger (for 22 to 26 cells). Three sizes: 3, 6, 12 amperes. Operates on 115 or 230 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular TM1624

Type 48 Battery Eliminator—Fully automatic. Supplies noiseless DC for telephone and signaling equipment. Four sizes: 3 amperes, 25 volts; 6 amperes, 25 volts; 3 amperes, 50 volts; 6 amperes, 50 volts. Operates on 115 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular TM1708.

Type 45 Battery Eliminator—For automatic, manual, or pushbutton intercommunicating system requiring 12 volts noiseless DC at 1.5 amperes. Operates on 115 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular TM1689.

Type 44 Battery Charger—For 1, 2, or 3 cells. Delivers 0.01 to 1.5 amperes. Operates on 115 or 230 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular TM1689.

Type 85 Battery Eliminator—Provides 150 volts noiseless DC (30 milliamperes) and 15-volt tap for test desks. Operates on 115 volts, 1-phase AC, 50 to 60 cycles. Ask for Circular TM1731.

Type 85-T Battery Eliminator—For Toll Test Boards. Ask for Circular TM1805.

Write: Automatic Electric Sales Corporation,
1033 West Van Buren Street, Chicago 7,
or call HAymarket 1-4300.

AUTOMATIC ELECTRIC

ORIGINATORS OF THE AUTOMATIC DIAL TELEPHONE

NEWSLETTER
TELEPHONE ENGINEER

Fortnightly TELEPHONE ENGINEER ★ TELEPHONE ENGINEER AND *Management*
ON THE 1st OF EACH MONTH ON THE 15th OF EACH MONTH

August 15, 1955

Dear Sir:

INDEPENDENT TELEPHONE companies with exchanges being studied for toll compensation purposes were strongly urged last month by the US Independent Telephone Association & its Toll Compensation Committee, to complete compilation of study data as rapidly as possible to avoid delays in setting up new settlement patterns.

U.S.I.T.A. Toll Compensation Committee Chairman W. Roy Jarmon who heads General Tel. Co. of Northwest, Arthur W. Lambert, chairman of Message Toll Compensation Subcommittee, & Ralph W. Shriner, who heads the Separations Subcommittee, joined in emphasizing to Independents the importance of meeting Aug. 31 deadline for study data.

The association spokesmen pointed out that substantial amount of study data have been submitted, but that number of exchanges still have not had study data completed. They recalled that under ground rules established by Bell System & U.S.I.T.A., each month's delay in submitting study data will advance a month the effective date of any adjustment in toll compensation. If Aug. 31 deadline is met, any new settlement is to be effective as of regular settlement billing period of June, 1955.

The studies involve both "A" & "B" functions – "A" covers use of local plant facilities, & commercial & revenue accounting expenses, & "B" encompasses toll operating, including ticketing, timing, & handling calls to completion – as well as line haul prorates. Mr. Lambert's subcommittee is working on "A" and "B" matters, while Mr. Shriner's group is concerned with the line haul prorates.

Agreement by U.S.I.T.A. & the Bell System on the study program was announced last spring. It involves surveying costs of handling interchanged long-distance traffic at a cross-section of about 600 Independent exchanges. U.S.I.T.A. pointed out in its announcement that when the Toll Compensation Committee was formed 19 years ago, the Independents' share of interchanged toll business was $12,000,000 a year, while today it is more than $120,000,000 a year, attributable both to sharply increased level of business & to improved toll settlements.

* * *

SALE OF PACIFIC Telephone & Telegraph Co.'s exchange at Port Gamble, Wash., to Olympic Telephone Co. was approved last month by FCC's telephone committee. Pacific Telephone had pointed out that its maintenance of the facilities at Port Gamble, which serve about 93 stations, involves dispatching crews from Bremerton, Wash., some 25 miles away, while the Olympic company, which has headquarters at Kingston, Wash., & serves an area adjacent to the Port Gamble exchange, would have to dispatch crews only eight miles. Sale price is $23,800.

At same time, telephone committee approved sale of Illinois Bell Telephone Co.'s exchange at Oquawka, Ill., to the Western Illinois Telephone Co. Illinois Bell said that the Oquawka exchange is isolated from its other facilities in that section of the state, with its nearest exchange at Rock Island, about 62 miles away, whereas Western Illinois Telephone could readily integrate the Oquawka exchange into its present operations. Facilities to be transferred, at a basic price of $33,000, serve about 280 telephones.

* * *

THE INDEPENDENT TELEPHONE INDUSTRY "offers very fruitful field for the investor," it is pointed out by investment firm, Shearson, Hammill & Co., in special analytical report. In its comprehensive review, investment company states that factors enhancing status of industry for investment purposes include availability of equipment that now permits emphasis on sales, popularity of extra telephones in home, decentralization of business by placing branch plants in smaller towns results in more long distance calls, & population growth.

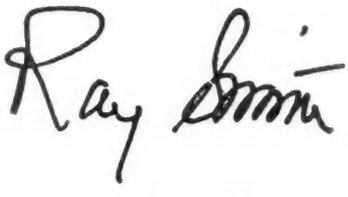
* * *

GENERAL STATEMENT of recommendations to Rural Electrification Administration on its telephone program, covering cooperation between all segments of telephone industry & REA in providing rural service, need for greater flexibility in REA engineering practices & in permitting qualified borrowers to do their own engineering, & program for training seminars to be conducted jointly by REA, industry, & state commissions, was issued by group of consultants to REA on the telephone program last month. Consultants met with REA Administrator Ancher Nelsen & top staff officials of agency July 21. Group included representatives from REA borrowers, state commissions, cooperatives, & Bell System & Independent telephone companies.

Two newly-appointed consultants to REA, who participated in their first meeting last month, are Frank S. Barnes, president of Rock Hill (S. C.) Telephone Co., and Elnathan C. Gates, president of Minnesota Tel. Co.

* * *

WITH SOUTHWESTERN BELL TELEPHONE CO.'s request that hearing record on its proposed acquisition of the Tomball, Tex., Telephone Co. be reopened for further evidence still unacted on by FCC, case stirred slightly last month when Commission reported that Motions Commissioner Robert E. Lee has granted intervention in case by Mayor, City Council, & civic organizations in Tomball. The organizations admitted to case are Rotary Club, Chamber of Commerce & Tomball Lions Club which, along with Mayor & City Council, are supporting Southwestern Bell acquisition of company, opposed by US Independent Telephone Association and the Texas Telephone Association.



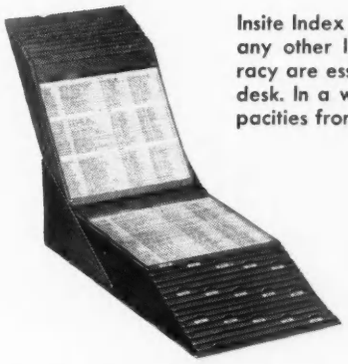
Ray W. Smith, Editor

ACME VISIBLE FLEXOLINE equipment for CENTRALIZED INFORMATION RECORDS

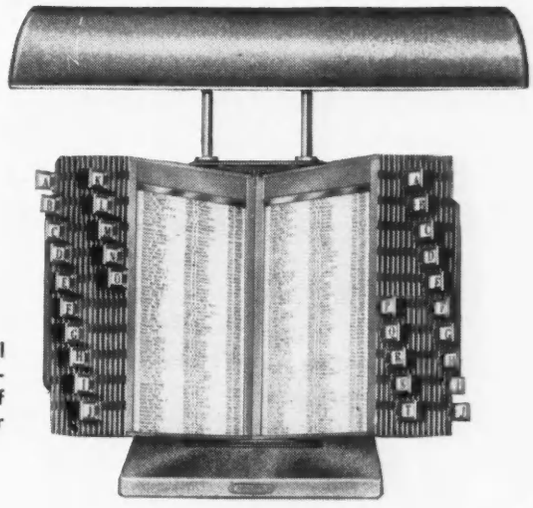
Speed up your central information switchboard records by making *all* of your telephone listings conveniently available to every information operator. With Acme FLEXOLINE Telephone Listing Equipment you have an up-to-the-minute record at all times, because changes are made in the record immediately upon installation or change in service.

Regardless of the type of switchboard you use or the number of subscribers you have, there is an Acme Time-Saving FLEXOLINE modern, hi-speed reference unit that will exactly meet your individual purpose.

Revolving stands provide compactness and great capacity—in single or double tier units they hold from 7,000 to 147,600 listings. May be used on desk, switchboard or mounted on pedestals.



Insite Index for small information lists or any other list where speed and accuracy are essential. Used on key shelf or desk. In a wide range of sizes and capacities from 350 to 2,500 listings.



Desk stands, as individual units with up to 32,800 listings capacity or in banks of any number of stands, for greater capacity.

Through the use of Acme FLEXOLINE Equipment, telephone companies have been able to render an improved service at a lower cost, speed up service and cut many corners in operation. The ease with which new names or listings are inserted in their correct places helps to keep lists always up-to-date, in many cases within a few minutes after the change has been completed.

ACME VISIBLE RECORDS, INC.

CROZET, VIRGINIA

District Offices and Representatives in Principal Cities

ACME VISIBLE RECORDS, INC., Telephone System Division, Crozet, Virginia

Please send us illustrated booklet

☐ #994 on Acme Multi-Card Bulletin Holders ☐ #982 on Acme Flexoline for Telephone Companies

☐ Have representative call. Date..... Time.....

☐ We are interested in Acme Visible equipment for ..... records.
KIND OF RECORD

Company..... Attention.....

Address.....

City..... Zone..... State.....

Here are two informative booklets illustrating and describing various units which have been designed for, and use-tested by, telephone companies throughout the country.

Send for your copies today!

How Cashiering *and* Bookkeeping are combined in this *2-clerk counter* . . . .

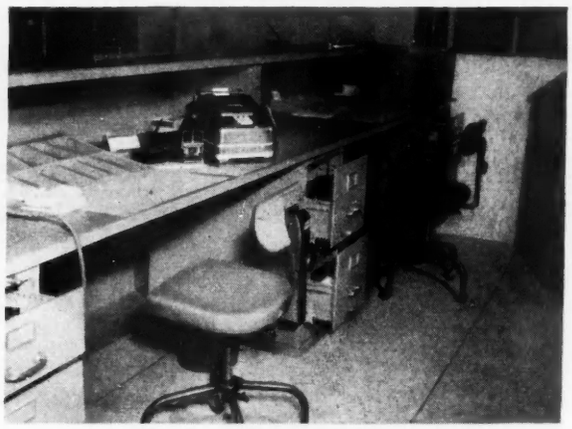
FOR WORKING EFFICIENCY AND GOOD PUBLIC RELATIONS

The two complete work stations making up this counter at Princeton Telephone Company* are Remington Rand's new sectional customer service counter units.

Unlike custom-built counters, this sectional counter unit, which accommodates all facilities and records for a cashiering and bookkeeping station, offers the highest degree of efficiency in the smallest amount of space.

Mr. V. A. Watkins, General Manager of the Princeton Telephone Company says, "Formerly, whenever a customer came into our office, the teller would have to stop her record work, rise from her desk and go to a stand-up counter to take care of the customer. After a full day of continually getting up and down, the tellers were exhausted and had little time left to do any record keeping.

"Now both tellers remain seated . . . *always* facing the customer – ready to serve . . . have complete facilities within arms' reach. Customers are served more promptly, efficiently and courteously. The continuous parcel shelf



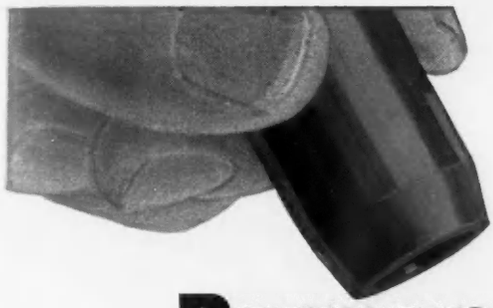
is especially appreciated by the many women customers with shopping bags. We feel the counter is paying real dividends in customer good will and employee morale."

For the Small Office a one section counter reduces costs by centralizing all customer contacts and records within reach of one clerk. **For Fire Protection** desk-height *certified* insulated units are available to protect counter-stored vital records, 24 hours a day, at their point-of-use.

Get the new illustrated booklet showing a full range of counter combinations and equipment. Write Remington Rand, Room 1841, 315 Fourth Avenue, New York 10 – just ask for SC764.

*Princeton, Indiana

Remington Rand
DIVISION OF SPERRY RAND CORPORATION



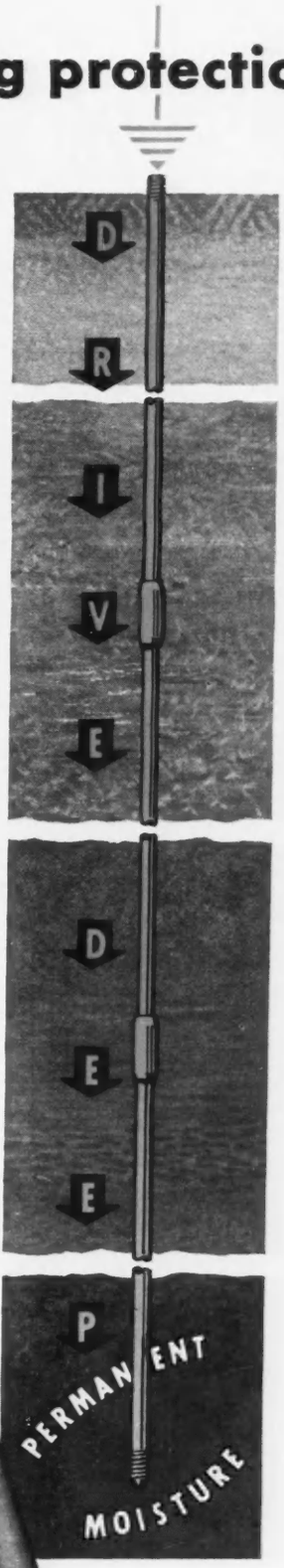
Permanent grounding protection—

simple as

a Drive deep—16, 24, 32 feet or more—to low-resistance soils.

b Determine how deep to drive by measuring the resistance of each section, allowing for seasonal variation.

c The result—you get top performance from protective equipment—*permanent grounding protection.*



with

Copperweld TRADE MARK

sectional ground rods

COPPERWELD STEEL COMPANY
WIRE AND CABLE DIVISION, Glassport, Pa.
For Export: COPPERWELD STEEL INTERNATIONAL COMPANY, New York

1955--our 40th year

Survey Shows Communications In Greatest Expansion Period.

COMMUNICATIONS was among the leaders in a mid-year survey of major industries, indicating new all-time high production and sales records this year. The survey was conducted by the 25 industry divisions of the Business & Defense Services Administration.

Under communications, the report was as follows: "The communications industry is in a period of its greatest expansion in history, and the $1.4 billion new construction program undertaken in 1954 will be exceeded this year. Main telephone installations are running 50 percent higher than in 1954, indicating a 1955 gain of 1,400,000 stations. Long-distance calling is 12 to 15 percent higher than in 1954." It was also brought out, in the electronics section, that production of electronic products is now expected to be $6.2 billion this year, "within a shade of the record $6.3 billion produced in 1953 and compared with $5.8 billion in 1954."

REA Names Basler To New Position

THE RURAL Electrification Administration has announced appointment of Donnan E. Basler to fill the new position of assistant chief for Staff Activities, Telephone Operations & Loans Division.

In this capacity Mr. Basler will be responsible for bringing together and evaluating the work of the present telephone staff in valuations, loans, accounting, rates, and management advisory services. In making the announcement Division Chief Everett C. Weitzell stressed the importance of sufficient top-level interest and cooperation in helping REA telephone borrowers to develop efficient operations and assure maximum economies necessary to repay the government loans on schedule.

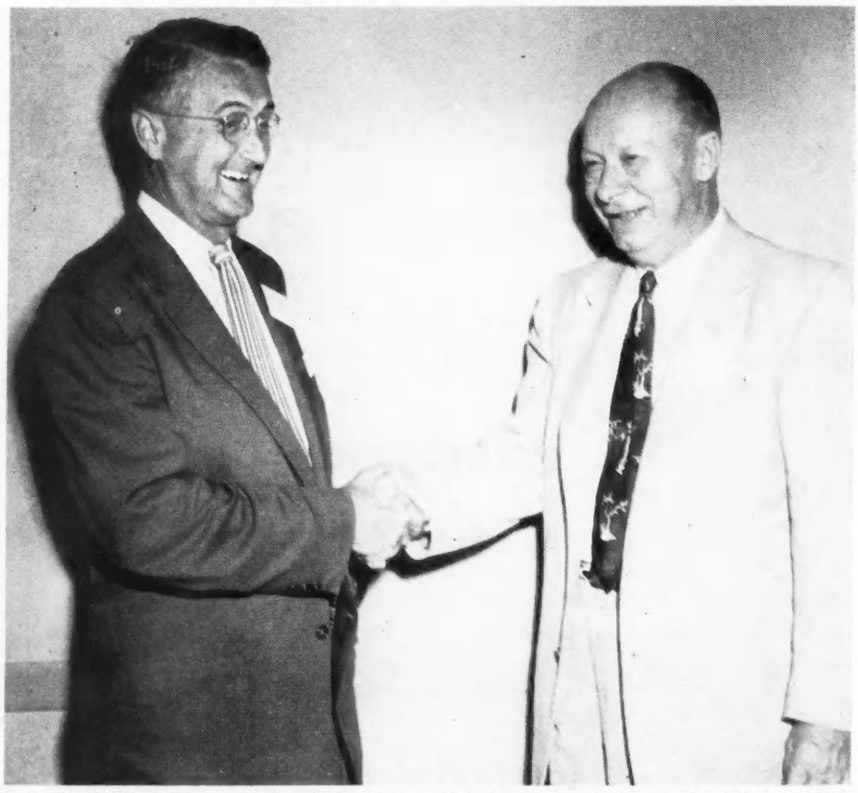
Mr. Basler, a graduate in engineering from the University of Michigan, joined the REA staff July 1, 1938. Since that time he has been performing highly responsible engineering and administrative duties in both the electric and telephone loan programs of the agency. For the last two years he has headed the valuation section of REA's Telephone Operations and Loans Division. He will continue to serve as acting head of that section until further notice, in addition to his new responsibilities.

General of Indiana Hits 135,000 Station Mark

GENERAL TELEPHONE Co. of Indiana, Inc., the state's largest Independent telephone company, last month passed the 135,000 telephone mark. The company has nearly tripled its size since 1940.

General of Indiana served only 49,000 telephones 15 years ago. By buying small companies and extend-

(Please Turn To Page 18)

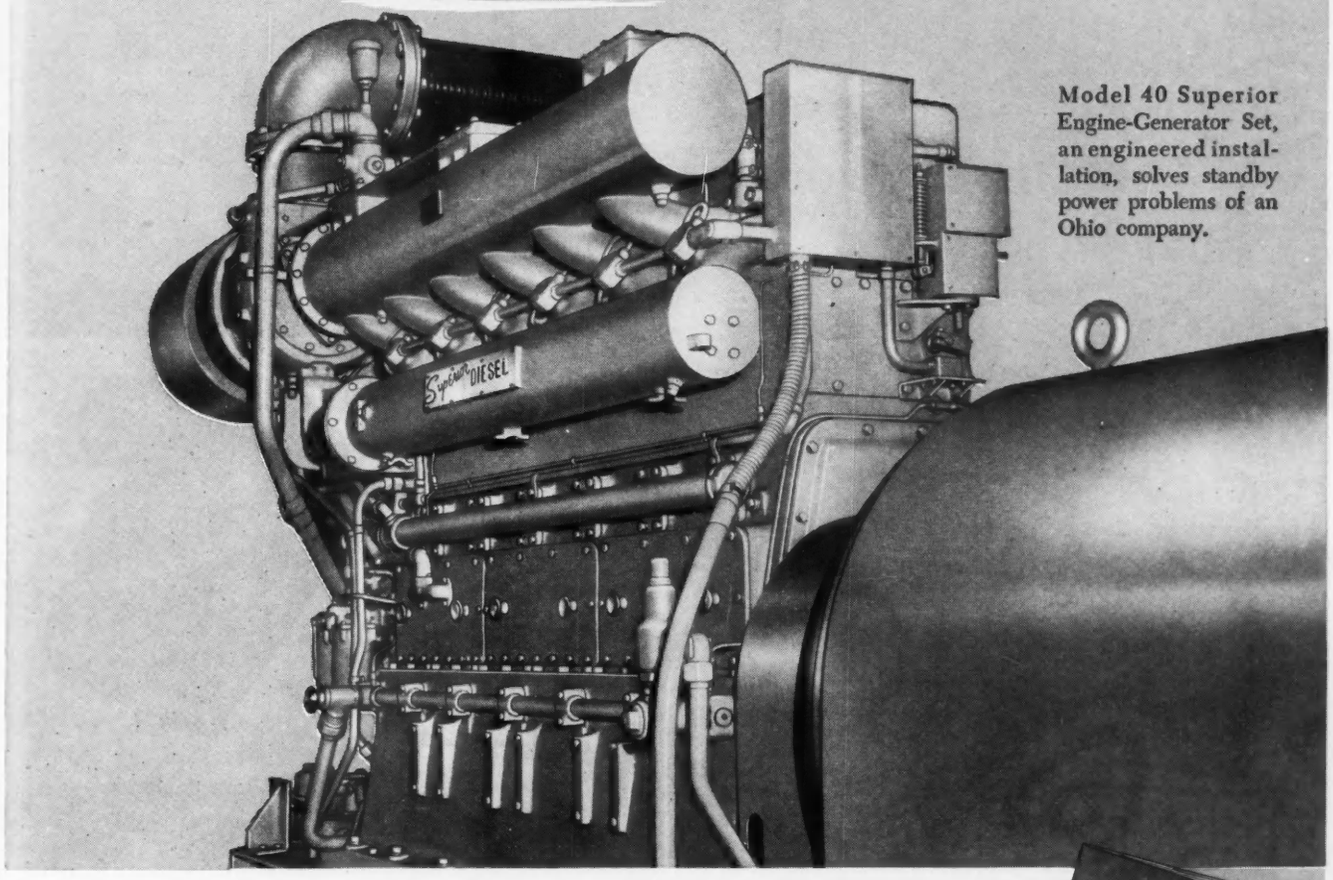


J. R. KREAMER (left), president of the Kansas Telephone Association, and CARL L. SPAID, president of the Missouri Telephone Association.

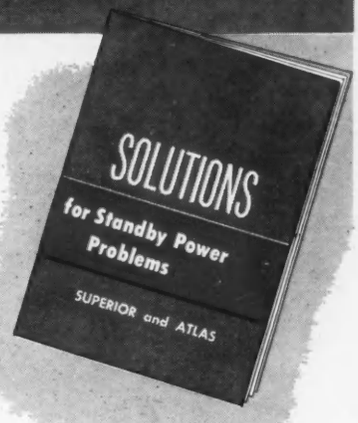
see how

Superior or Atlas Engines

solve your standby power problems



Model 40 Superior Engine-Generator Set, an engineered installation, solves standby power problems of an Ohio company.



Engineered installations of Superior and Atlas Diesel, dual fuel and gas engine-generator sets have solved hundreds of standby power problems! In many cases they've paid for themselves. Their automatic start and stop operation often averts tragic consequences, by providing efficient, dependable power for essential plant services in every instance of main power source failures. In order for you to have all the facts and figures we've prepared a special case history file. It shows many instances of how our skilled engineers assisted in solving serious problems involving special considerations and peculiarities in individual installations. Chances are many of the installations will be similar to yours. This information will prove a valuable aid in your planning.

Write, on your letterhead, requesting this file of helpful examples. White's skilled engineers, with years of experience in developing engineered installations of Superior or Atlas engine-generator sets, will assist you in engineering the proper standby power for your specific requirements.

WHITE DIESEL ENGINE DIVISION

THE WHITE MOTOR COMPANY • *Plant and General Offices: Springfield, Ohio*

Superior ENGINES · ATLAS Imperial DIESEL ENGINES · White DIESEL

NORTH

Switchboards

Available in Canada through ERICSSON TELEPHONE SALES of CANADA, Ltd. 1410 Stanley Street Montreal 2, P.Q.

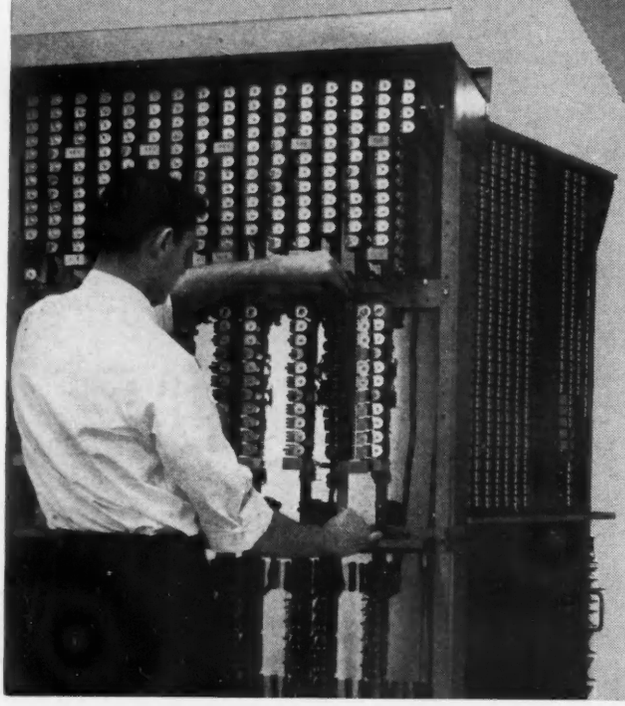
Central Office Exchanges

CXJ (CX equipment with jack-in components.) Expand with ease. Terminal-per-line or terminal-per-station available. Saves space and time in installation and maintenance. 100 line units are now available with greater link capacity requiring less floor space, For complete details ask for Bulletin CX 531.

Telephones

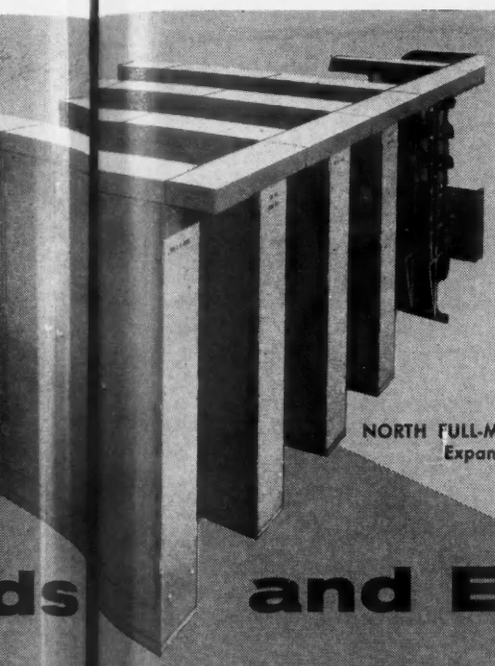
The N-541 Telephone combines utility, convenience and beauty to win unanimous subscriber approval. A detailed explanation of every advantage found in the N-541 appears in Bulletin T-542. Write for your copy today.

Toll Boards



Complete line of cord or cordless toll boards, attendant boards, wire-chief desks, test panels, battery chargers and switchboard accessories.

NORTH

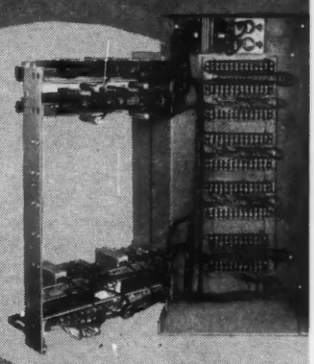


NORTH FULL-MULTIPLE PABX
Expandable from 30
to more than
1000 lines.

Internal Communications

PABX equipment of all sizes, for all types of service, from six lines to hundreds. PUSHBUTTON PABX — Expandable to six CO trunks and twenty stations. All stations equipped to originate, hold and transfer calls.

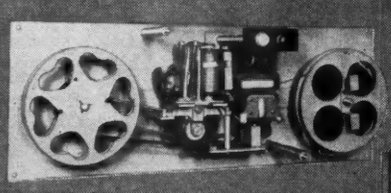
Pushbutton relay unit can be easily installed in any out-of-the-way location.



and Equipment

Every North All-Relay exchange, whether it is central office equipment with 100 or 10,000 lines, an office pushbutton system or a large industrial PABX, operates entirely by relays for reliable maintenance-free service. North relays are made with self-protecting coils—self-cleaning precious metal double contacts. Minimum maintenance inspection at widely spaced intervals is sufficient to keep this equipment constantly in action. For the very best equipment . . . always specify NORTH.

Automatic Ticketing

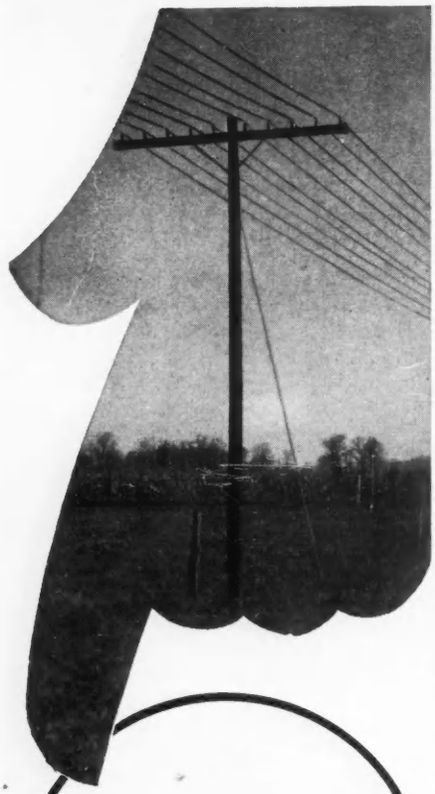


1. RECORDER UNIT registers all information necessary for billing of toll calls on a tape which becomes a permanent record. Record data includes calling exchange, called exchange, calling number, called number, month, date, time, and minutes talked.
2. ANALYZER UNIT "reads" the tape and computes the charge from preset base and overtime rates. May be connected to modern business machines for further automatic accounting procedures.
3. "TELETYPE" PRINTER in the analyzer unit prints the information and cuts the tickets to standard size.

insure reliable service

THE NORTH ELECTRIC MANUFACTURING COMPANY

655 South Market Street • Galion, Ohio



Crapo
HTL-135
INDIANA STEEL & WIRE CO.
MUNCIE, INDIANA U. S. A.

LOWER
Cost Per Mile

● Efficient rural telephone circuits can be built at minimum overall cost where Crapo HTL-135 High-Tensile Line Wire is used to full advantage. For Crapo HTL-135 makes possible spans up to 350 feet in heavy, 540 feet in medium and 650 feet in light loading districts. Longer spans mean fewer pole structures with substantial savings in material and labor costs per mile.

The rugged tensile strength of Crapo HTL-135 and its heavy galvanized coating provide dependable and economical service life on typical rural lines.

Ask your jobber for details or write direct for engineering data!

INDIANA
STEEL & WIRE COMPANY
Muncie, Indiana

(Continued From Page 14)

ing its own lines, General boosted its total to 91,000 in 1950. Since January 1 of this year, the company has added more than 5,000 telephones to its network operating in 224 communities.

General has allocated large sums for improvement of service. Since the end of World War II, the company has spent more than 29 million dollars on equipment and construction. A total of $4,350,000 has been budgeted for equipment and construction this year alone.

H. E. Hussey, of Lafayette, president, says, "There is a great demand for telephones these days, particularly extension or extra telephones in the home. These extension telephones are readily available as are many other telephone accessories. Apparently few people know this, because more families have two cars than have two telephones."

Formed February 5, 1930, General Telephone of Indiana was originally known as Indiana Commercial Telephone Company and began operations in 1932 with only 41,000 telephones. The present name was adopted in 1952. This is the 25th anniversary year for the company.

Court Refuses To Accept Jurisdiction In Rate Case

A WRITTEN opinion has been handed down by the U. S. District Court for the Western District of Arkansas of the court's reasons for refusing to accept jurisdiction of the General

(Please Turn To Page 23)

COVER STORY

THE NEW EMBLEM of the United States Independent Telephone Association, which is shown on the cover, is being introduced to the public this month in national and local advertising. The first national consumer advertising of the association to carry the emblem will appear in the August issue of TIME Magazine and the August 26 issue of U.S. NEWS & WORLD REPORT. The association's tie-in advertising, distributed by the Telephone Advertising Institute of Chicago, is also carrying the emblem beginning this month.

By August 1 copies of the emblem were in the hands of the 3,000 Independent telephone companies, manufacturers, and suppliers who are members of national or state associations. Before the Chicago convention in October the mechanics of supplying the association members with actual cuts, decals and other forms of the emblem are expected to be established.

"Designed primarily for local use — in advertising and printed material, on telephone booths, buildings, signs and vehicles, on company letterheads and telephone directories — the new emblem will unite the Independent telephone industry under a single, recognizable insignia," Leon F. Roberts, the association's director of information, has pointed out. The association's coordinated program of national advertising, he feels, is "a powerful means for focusing national attention on the new emblem and on all independent companies who use it."

The version bearing the full name of the association is intended for use on company letterheads, in advertising to the trade, and otherwise "where evidence of affiliation is meaningful." The simpler version is recommended for display before the public and will appear in all national advertising.

Manufacturer and supplier members of the association have been asked to use the emblem in their advertising, both to the trade and the public, especially during the introductory months of August, September, and October.

The emblem is the culmination of several years' discussion and effort by the association's advertising committee and national advertising task force. Several possibilities were submitted by the association's advertising agency, J. M. Mathes, Inc., of New York, and the board of directors made their selection at the spring conference at Belleair, Fla., in April.

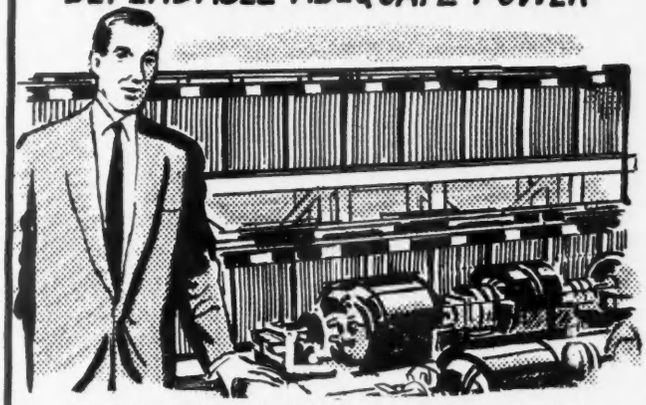
FACTS ABOUT Exide®

MANCHEX® TELEPHONE BATTERIES

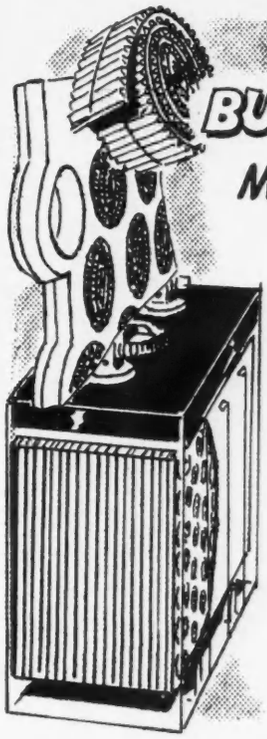
MICROWAVE DEPENDABILITY ...ASSURED BY DEPENDABLE EXIDES!

ENSURING CONTINUITY OF SERVICE, GUARANTEEING OPERATION OF EQUIPMENT INSIDE MICROWAVE RELAY TOWERS ARE THOUSANDS OF EXIDE BATTERIES. THEY FURNISH INSTANT, AMPLE POWER FOR MANY EMERGENCY NEEDS—DO IT WITH LOW OPERATING, DEPRECIATION AND MAINTENANCE COSTS. EXIDES ARE ALWAYS YOUR BEST BATTERY BUY—*FOR ALL TELEPHONE SERVICES!*

"GOOD SERVICE STARTS WITH DEPENDABLE ADEQUATE POWER"



A USER OF EXIDES—ALWAYS DEPENDABLE BATTERIES—SAID THAT RECENTLY. THE "POWER ROOM" OF THIS INDEPENDENT TELEPHONE COMPANY ENGINEER IS PLANNED TO ASSURE SERVICE CONTINUITY UNDER PRESENT LOAD CONDITIONS AND DURING FUTURE GROWTH. EXIDE MAKES A COMPLETE LINE OF TELEPHONE BATTERIES—IN BOTH GLASS AND PLASTIC... BACKS THEM ALL WITH YEARS OF CONSTRUCTION SKILL AND ENGINEERING RESEARCH.



BUTTONS OF LEAD MEAN LESS COST FOR YOU

THE IMPROVED PLANTĒ TYPE POSITIVE PLATES OF THE EXIDE-MANCHEX BATTERY ARE OF THE MANCHESTER DESIGN—AN EXCLUSIVE EXIDE FEATURE. BUTTONS OF LEAD DELIVER THE POWER YOU NEED, WHEN YOU NEED IT. OVER A HALF CENTURY OF DEPENDABLE PERFORMANCE IN TELEPHONE BATTERY SERVICE HAS DEMONSTRATED THAT EXIDE BATTERIES WITH THEIR BUTTONS OF POWER ARE YOUR BEST POWER BUY—*AT ANY PRICE!*

LET EXIDE HELP SOLVE YOUR TELEPHONE BATTERY PROBLEMS. ❶ CALL AN EXIDE SALES ENGINEER FOR FULL DETAILS. ❷ WRITE FOR FORM 4993, A TELEPHONE BATTERY ENGINEERING AND MAINTENANCE MANUAL.

Exide INDUSTRIAL DIVISION, The Electric Storage Battery Company, Philadelphia 2, Pa.

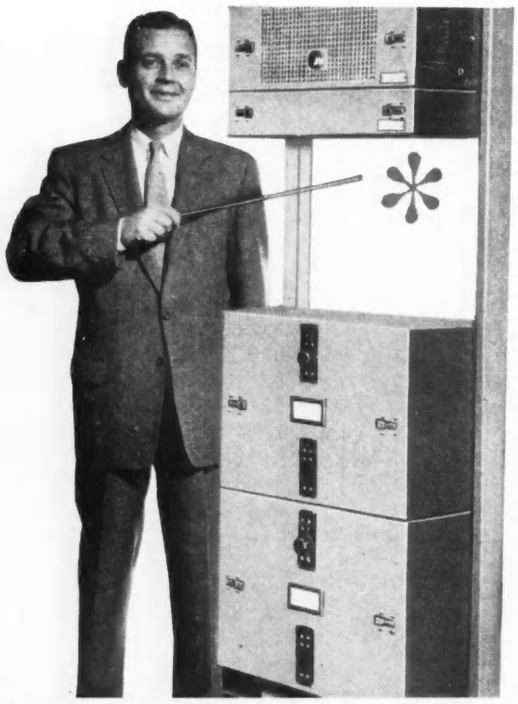
You and your carrier can grow together

Even if you are "starting small"—even if you've had little (or no) experience with carrier—you'll find Lenkurt Type 33A Carrier is made for you.

It is a low-cost, easy-to-use system that really fits your budget. And it is easy to install, easy to maintain, easy to expand. (You can start with a single channel, add a second, then a third.) There are no more lines to string, no construction man-hours wasted. It is by far the least expensive, least complicated way to add new channels; in fact Lenkurt Type 33A often proves-in over distances as short as 7 miles!

Learn how this Lenkurt Carrier system can help you solve *your* communication problems. *Write today* for Bulletin 33A-P20. Or contact Automatic Electric carrier engineers for their specific recommendations. *Address* Automatic Electric Sales Corporation, 1033 West Van Buren Street (HAymarket 1-4300), Chicago 7, Illinois. *In Canada:* Automatic Electric Sales (Canada) Ltd., Toronto. *Offices in principal cities.*

this space reserved for expansion



LENKURT TYPE 33A CARRIER *gives you new telephone channels with* ● *no new poles* ● *no new lines* ● *no added construction crew — just this simple, compact unit.*

● *EASY to install — Carrier can be in operation in less than a week after equipment arrives.*

● *EASY to maintain — Your own men can service it with simple, low-cost equipment.*

AUTOMATIC ELECTRIC

ORIGINATORS OF THE AUTOMATIC DIAL TELEPHONE

AUTOMATIC ELECTRIC — LEADERS IN CARRIER COMMUNICATION — **LENKURT**

REYNOLDS ALUMINUM OUTDOOR TELEPHONE BOOTHS

Better to See!

Here are the best-looking outdoor telephone booths you've ever seen! They're made of Reynolds Aluminum. Trim, functional, matchless in appearance as well as service—they have wide areas of light and vision, soft, satin-like anodized aluminum finish throughout. They keep on looking good, too—with minimum maintenance. Since they're aluminum, they can't rust or rot, *never* need paint for weather protection.

Designed in REYNOLDS ALUMINUM © 1954 REYNOLDS METALS CO.

Better to Use!

Paystation customers prefer outdoor booths designed in Reynolds Aluminum—and for good reason. They like the greater comfort of these roomier booths . . . the excellent ventilation . . . the large shelf for packages and handbags . . . the convenient tip-in directory . . . the better visibility . . . and many other features. No wonder these aluminum outdoor booths more than pay their way in revenue. They sell *extra* paystation business because they invite it.

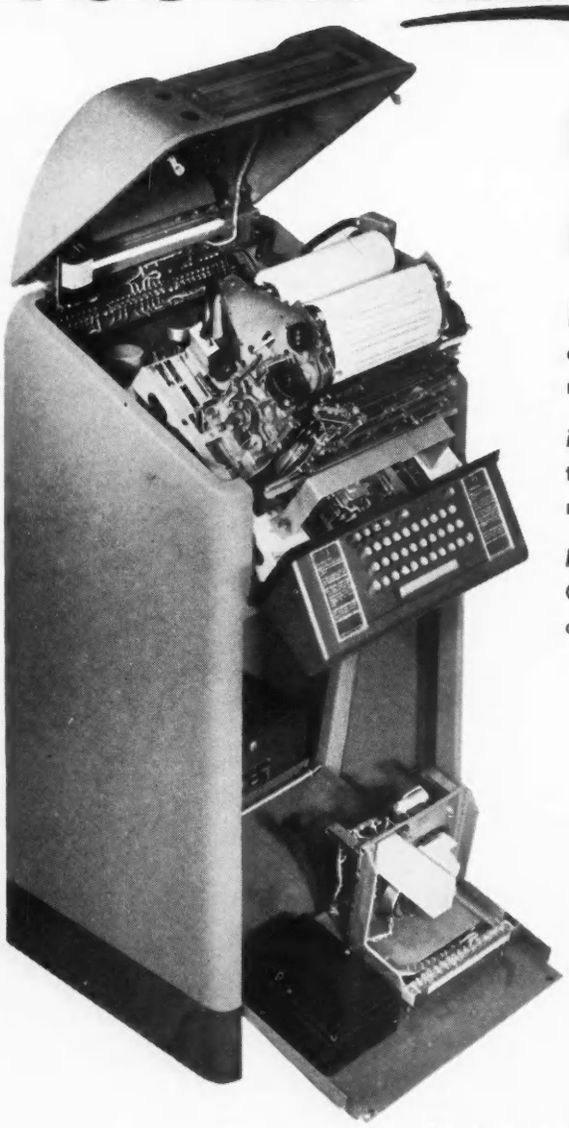
Better to Own!

Outdoor booths designed in Reynolds Aluminum are surprisingly low in cost, far more economical to maintain. In addition to the rustproof advantages of aluminum, they offer maximum portability—are easy to relocate. What's more, parts are lighter, hard to damage, easier to handle. Parts and glass are easily replaced, too—saving you time and money. Add up the savings, add up the longer booth life, add up the extra revenue these booths bring in. See for yourself why outdoor booths designed in Reynolds Aluminum belong in your operation—*now*. Supplied completely assembled or in sub-assemblies. Write today for full information and the name of your nearest distributor.

Reynolds Metals Company, 2000 S. Ninth Street, Louisville 1, Kentucky.

REYNOLDS ALUMINUM FABRICATING SERVICE

YOU'VE HEARD ABOUT IT!
YOU'VE READ ABOUT IT!



Now get the full story on the Teletype '28' Printer

FREE BOOKLET TELLS ABOUT ***smoother, quieter operation*** at 60, 75 or 100 words per minute . . . by means of a completely new concept in printing telegraphy.

ingenious typebox that replaces the conventional type-basket . . . is tiny, lightweight, quickly removable without tools.

less maintenance . . . new design featuring an All-Steel Clutch means lubrication is needed only once a year at normal (8 hours a day) 60-wpm operation.

WRITE FOR YOUR FREE COPY TODAY!

Teletype Corporation Dept. TEM 8
4100 Fullerton Ave., Chicago 39, Illinois

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

(Continued from page 18)

Telephone Company of the Southwest request for preliminary and permanent injunctions against the Arkansas Public Service Commission.

General had sought to restrain the PSC from enforcing its December 1954 ruling allowing the Company only $35.240 of a requested $302,230 annual rate increase.

The case was filed in Federal Court on the contention that the PSC rates confiscated interstate facilities since the company's Texarkana exchange is located both in Arkansas and Texas.

In refusing to accept jurisdiction, the court cited the so-called Johnson Act, which prohibits U. S. District Courts from jurisdiction restraining or suspending any rate order where:

(1) Jurisdiction is based solely on diversity of citizenship or repugnance of the order of the Federal Constitution.

(2) The order does not interfere with interstate commerce.

(3) The order has been made after reasonable notice and hearing, and,

(4) A plain, speedy and efficient remedy may be had in the State Courts.

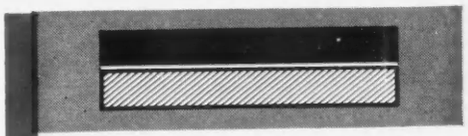
The court concluded that the only points of the Johnson Act of which consideration was in order was whether the order "interferes" with interstate commerce and whether the procedures available to General in the courts of Arkansas were plain, speedy and efficient and fully adequate to protect constitutional rights.

The court ruled that the PSC rate order does not interfere with interstate commerce and that procedures available to the company in the State Courts were plain, speedy and efficient as well as being adequate to protect constitutional rights.

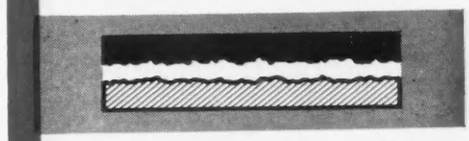
As to whether or not the order interferes with interstate commerce, the court said it was "satisfied that said order did no more than fix rates to be charged the Arkansas subscribers of the company."

The court claims that even if General is laboring under a confiscatory rate in Texarkana which constitutes an interference with interstate commerce, "such interference does not arise from the order of the commission," but from the fact that under General's Texas franchise "it is unable to charge rates to its (Texarkana) Texas subscribers which would yield it a fair and reasonable return

Banish Burnaway...



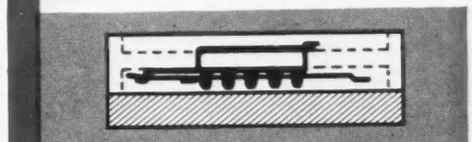
When ordinary, *non-grounding* discharge blocks are used, each discharge tends to burn away a little more of the electrodes . . .



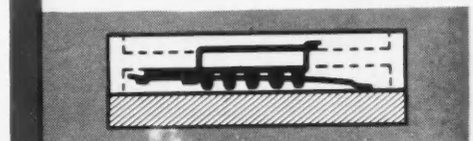
. . . thus widening the gap. Such blocks become completely ineffective in time, since they protect only at constantly increasing potentials.

. . . Get *Lasting* Protection

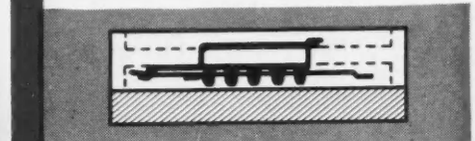
with Automatic's "Dollar-Saver" Discharge Blocks!



When Automatic's Type 70 "Dollar-Saver" Discharge Blocks are used, a current jumping the gap heats the bi-metallic strip . . .



. . . which bends, shorting the line to ground instantly. Type 70 . . .



. . . then resets itself. Sawteeth and carbon are still sound, not partially burned away. Type 70 provides *lasting*, dependable protection.

Type 70's are proved money-savers in actual telephone service all over the country.

Order Cat. No. SC-10 (.003" gap) for substation protectors and distributing frames. (Operates within UL requirements.)

Order Cat. No. SC-11 (.0055" gap) for cable terminals and crossarm arresters.

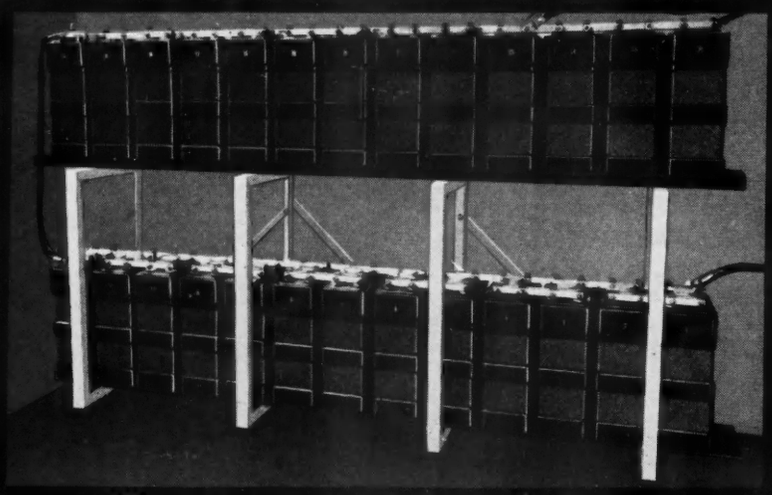
Distributor in U. S. and Possessions:
Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7.

AUTOMATIC ELECTRIC

ORIGINATOR OF THE AUTOMATIS DIAL TELEPHONE

At the Peninsular Telephone Co.

It's C&D Batteries for EXTRA life



C&D installation at the Peninsular Telephone Co., St. Armand Office, Sarasota, Florida. 26 cells, Type RCT-840, rated 840 A.H., are C&D PlastiCal (lead calcium).

The Peninsular Telephone Company is the second largest independent telephone company in the country, and serves the Central West Coast area of Florida with Tampa as its headquarters. To help provide continuous, dependable telephone service for one of Florida's busiest tourist centers, the Peninsular Telephone Co. chose C&D PlastiCal (lead calcium) batteries for several of the installations in its system.

For your next battery, specify C&D, for with C&D you get:

1. Maximum battery life—minimum expectancy of 25 years
2. Better maintenance—patented Post Seal eliminates acid creepage—lead calcium means less water additions
3. Maximum safety, see C&D's exclusive Saftee-Vent—and tough polystyrene jars and fused cover

You can order C&D batteries from your equipment supplier.

Write for Bulletins!
For details and specifications on C&D telephone batteries, write for Bulletins T-527/55 and T-528 Rev. 3.

C&D BATTERIES, INC.
of Conshohocken, Pa.
Industrial Batteries since 1906
Sales and Service Offices in Principal Cities from Coast to Coast

(Continued From Page 23)

on its investment; but that is a situation with which the Arkansas Commission is not concerned and over which it has no control.

"There is nothing to prevent the Texarkana (Texas) City Council from relieving the company of this franchise provision and permitting the company to put into effect rates in Texas which would relieve it of its alleged burden of confiscation."

The court opinion went on to state that the court does not feel General would be unreasonable or discriminatory by charging different rates in Texarkana (Texas) than in Texarkana (Arkansas) since separate municipalities and separate states are involved.

Turning to the question of the adequacy of the remedy available to General in the State Courts in Arkansas, the U. S. District Court said it was "convinced" that there is no relief which the General "could obtain here that it could not have obtained in the State Courts."

In conclusion, the court stated that General, "without resorting to available state remedies, is asking us to interfere in what is, from a practical standpoint, essentially a local problem, and to overturn the considered judgment of the Commission with respect to a matter within its jurisdiction. Such being the case, and in view of the adequacy of the State remedy, we feel that the doctrine of comity should be applied and the case dismissed even if jurisdiction exists."

Rate Boost Granted McKrae Telephone Co.

THE KANSAS Corporation Commission has granted McKrae Telephone Co., Inc., Fredonia, Kans., authority to raise rates $23,100 annually to the 4,779 customers it serves in Altamont, Altoona, Benedict, Buffalo, Burlington, Coyville, Fall River, Fredonia, Lafontaine, Neosho Falls, Piqua, Quincy and Toronto.

Home Telephone Co., Home City, Kans., serving 221 customers was allowed a $1,860 annual raise increase.

AIA Publishes New Accountants' Index

THE AMERICAN Institute of Accountants announced last month the publication of a new supplement to the "Accountants' Index." The 486-page book includes approximately 20,000 listings covering all books, articles and pamphlets on accounting,

·ANSONIA·

Ankoseal®

—*the original plastic telephone cable*

Announces

3 BIG NEW ADVANCES WITH

·ANSONIA·

Ankofoam® TYPE 775-PF

cellular polyethylene insulated telephone cable

1. Full Color Coding
2. Lighter Weight
3. Smaller Diameter

Available fully color coded in sizes

11 pair to 51 pair

19, 22, 24 gauge

Standard color coded in sizes

76 to 909 pair

22 and 24 gauge

Color Coding provides readily identified pairs. It eliminates the need to ring out or probe for pairs thus saving manpower in cutting in terminals and loading coils. Terminal count changes are made easier and maintenance costs are reduced. Now you can have all these advantages with ANKOSEAL-ANKOFOAM Type 775-PF Telephone Cable.

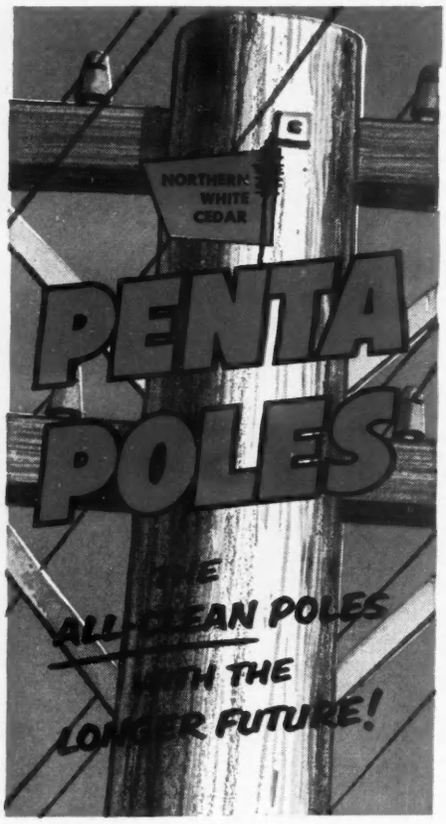
ANKOSEAL CABLE is sold to independent telephone companies through authorized Telephone Supply Distributors only.

Lighter weight and smaller diameter result from cellular polyethylene insulation. This means less ice and wind load plus reduced cable weight permitting less sag or longer spans.

ANKOFOAM Type 775-PF is a worthy companion to time-tested standard ANKOSEAL Type 775-P Telephone Exchange Cable. The availability of both types means you may choose the cable that is best suited to a particular application.

THE ANSONIA WIRE & CABLE COMPANY

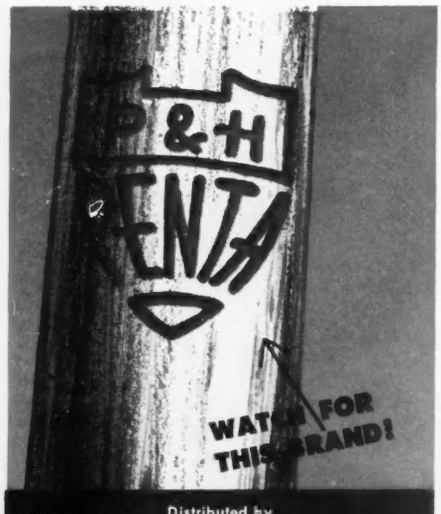
ANSONIA, CONNECTICUT Phone REGENT 4-3305



SCIENCE and NATURE combine forces in P&H Northern White Cedar PENTA Poles. Durable, straight, lightweight, naturally sturdy Cedar is treated from top-to-butt for decades of resistance to insects, termites and decay. Cut down costly pole replacement and maintenance . . . increase your company profits. Buy clean, safe, longer-lifed PENTA Poles.

Before you buy . . .
Get the complete story!
WRITE FOR OUR FREE PAMPHLET
"Full-Length Treated Northern White Cedar P & H PENTA POLES,"
TODAY!

PAGE & HILL, INC.
MINNEAPOLIS 2, MINNESOTA



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(Concluded from page 24)

taxation and related subjects published in 1953 and 1954.

The 1953-54 volume is the 11th supplement of the Index originally published in 1920. Each supplement contains, for the years covered, an entry for every card in the catalogue of the Institute's library.

The new volume is available at $12 from the American Institute of Accountants, 270 Madison Ave., New York 16, N. Y.

Chenango & Unadilla Corp. Installs 25,000th Telephone

A SPECIAL CEREMONY, marking the addition of the 25,000th telephone to the system of the Chenango & Unadilla Telephone Corp. took place June 8 at the home of Dr. and Mrs. Ralph J. Gross, Greene, N. Y.

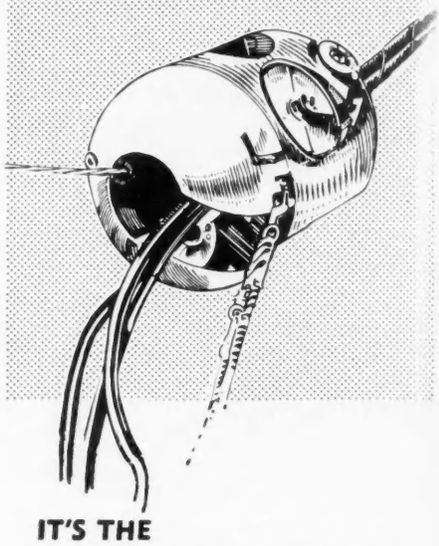
Present for the occasion were William J. Evans, mayor of the Village of Greene, Guy L. Marvin, supervisor of the town of Greene and chairman of the Chenango County Board of Supervisors and the following officials of the C. & U. Company: William A. Seely, president and general manager, George F. Shoemaker, chief engineer and assistant general manager, Robert F. Pannick, commercial manager and D. L. Brewer, Greene district manager.

Mrs. Kate Woodruff, of Radio Station WCHN, Norwich, also attended, interviewed the various officials and recorded the proceedings which were broadcast on her radio program on WCHN on June 10.

Mr. Seely commented on the growth of the C. & U. system from three central offices in 1922 serving some 3,000 telephones in Norwich, New Berlin and Waterville to the present network of 32 central offices serving 25,000 telephones on lines extending into 11 counties. Of the increase of 22,000 stations since 1922, 12,000 were added by the purchase of other companies. The other 10,000 were the result of natural growth and development.

This growth has been especially rapid since World War II. In order to meet the unprecedented demand for telephone service the C. & U. company has spent more than five and one-half million dollars since 1948 on a program of expansion and improvement which will require several more years for completion. During this time the number of stations has increased from 11,700 to 25,000.

THREE TO ONE



IT'S THE
NEALE MODEL "K"
Only the
Model "K" Spinner
PLACES & SPINS
THREE SINGLE CABLES
Into
ONE COMPACT UNIT

ALSO SPINS SINGLE CABLE PERFECTLY

WRITE FOR LITERATURE AND PRICES

CABLE SPINNING EQUIPMENT CO.
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OVERSEAS SALES:
Ericsson Telephone Sales Corp. of New York
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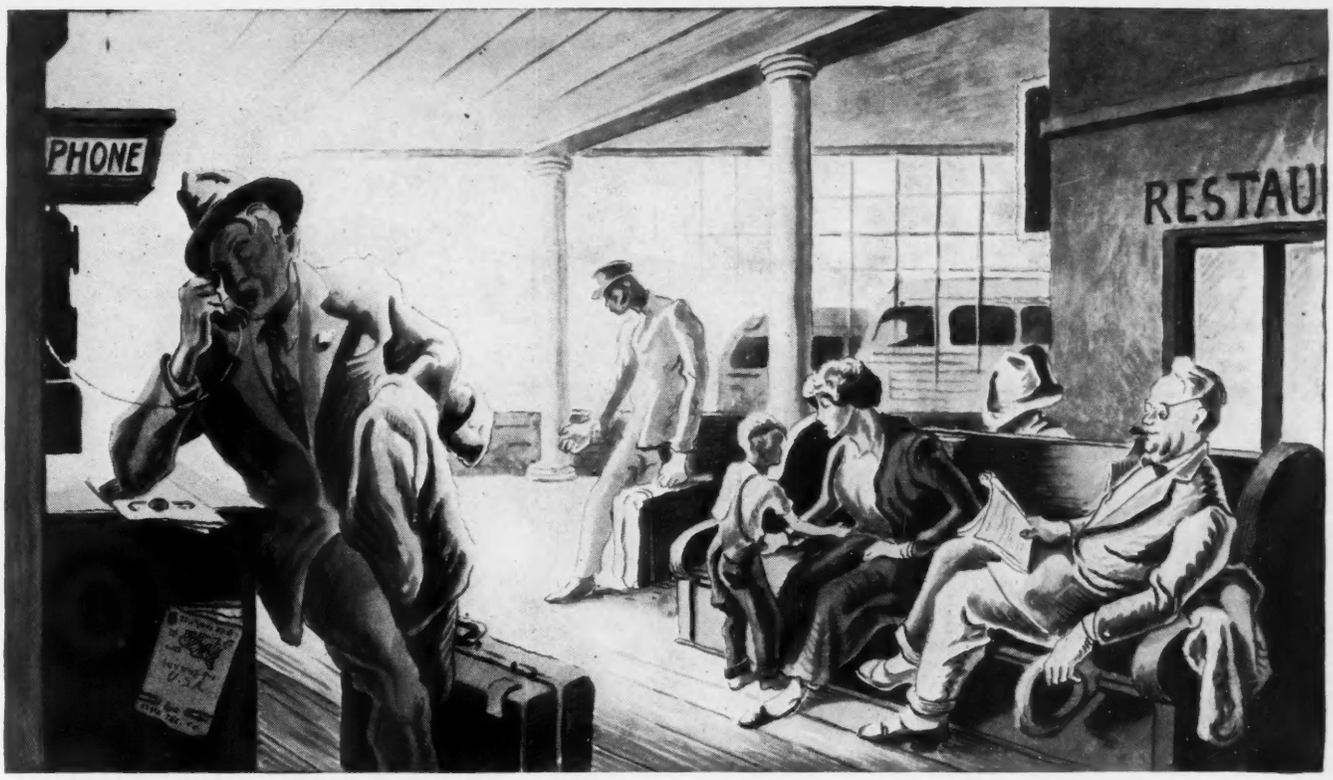

LIFE OF TRADE

BY Thomas Hart Benton

Every salesman knows that the telephone directory is his best guide in breaking into any town with a brand new line.

It's an accepted fact now in business that telephone directory advertising and listings have become a "must." Yes, "you're in business, if you're in the telephone book."

Are you one of the telephone men who hasn't the time to capitalize on this basic advertising medium—your own telephone directory?

It's no longer necessary to be advertising solicitor, printer and publisher—in addition to being a good telephone man. Now you can turn over the mountain of details, involved in getting the maximum in revenue and good will out of your directory, to people who make a specialty of building telephone directories.

The Loomis Advertising Company is one of the fine organizations in the field. Why not call our nearest office. No obligation on your part, of course.

LOOMIS

ADVERTISING COMPANY

Over 760 cities and towns in 20 states are served by 250 Loomis-built directories.

We have commissioned Mr. Benton to draw four scenes of American Life. A limited edition of 9 x 15-inch prints suitable for framing has been ordered. We think they offer a nice public relations touch to your telephone office decoration. To get your Benton print FREE, write Wesley H. Loomis III, 810 Baltimore, Kansas City, Mo.

LIFTS YELLOW PAGE REVENUE . . . BUILDS PUBLIC RELATIONS

"Where to Call"

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810 Baltimore
HArrison 1270

FORT WAYNE
229 E. Berry St.
EAstbrook 3477

• *Only Masterphone Features The Kellogg Triad Circuit*

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A Division of International Telephone and Telegraph Corporation

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1515 Turtle Creek Blvd.
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San Francisco 3, California
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Mansfield, Ohio
Mansfield 7-2816

KELLOGG BRANCH OFFICES:

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50 Church Street, New York 7, New York

Established Success in Every Exchange!

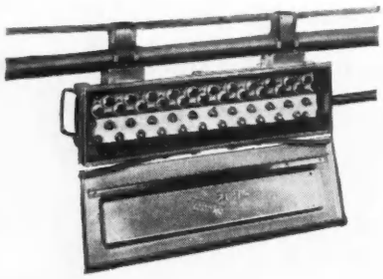
KELLOGG 1000 SERIES MASTERPHONES

...completely adaptable to any type of subscriber telephone service!

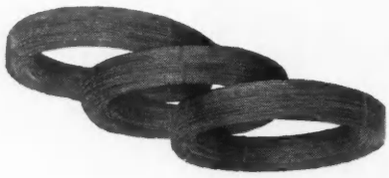
MASTERPHONES

KELLOGG 1000 SERIES MASTERPHONES have been standard equipment for many telephone companies since they were introduced in 1945. Why? Because *Masterphones* are engineered for superior, universal service. Designed for complete adaptability, they are always equally outstanding in common battery or magneto exchange operation —regardless of type. And this adaptability to any commercial ringing service is but one of many reasons why *Masterphones* have earned—and held—the genuine approval of practical telephone men. Write for complete facts today, or ask your Kellogg representative to show you the features that keep *Masterphones* at the top in its class!

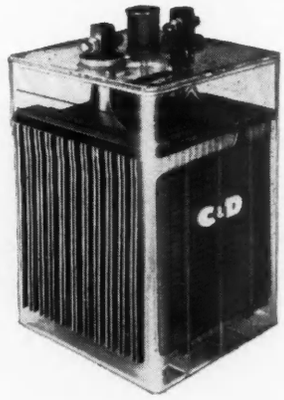
- EXCELLENT SIDE TONE CONTROL
- LOW MAINTENANCE COST
- MINIMUM INVENTORY
- QUICKLY CONVERTED FROM DESK TO WALL TYPES
- CIRCUIT EASILY CONVERTED TO ALL TYPES OF SERVICES
- UNIFORM TRANSMISSION



Suitable for Use in Cable systems maintained under gas pressure. The housings of the 11 and 16 pair Type "ST" Strand Cable Terminals are equipped with stub cable entrance holes at opposite ends for reversal of stubs. RELIABLE ELECTRIC CO.



Save Three Ways . . . on materials, manhours, and maintenance with INDIANA STEEL & WIRE CO.'S Crapo HTL-85 and HTL-135 Line Wire. Galvanized by the famous Crapo Galvanizing Process, protected with heavy, ductile coating of zinc.

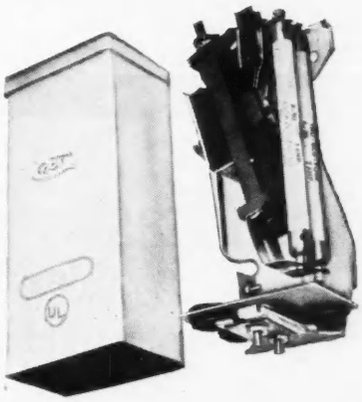


Extra-Long Life! — The suspended and supported plate construction is an exclusive feature of C&D BATTERIES. Choose C&D's PlastiCal (lead-calcium grids) for life expectancy of 25 years . . . for 14 years expectancy, specify PlastiCell (high tensile lead alloy grids).

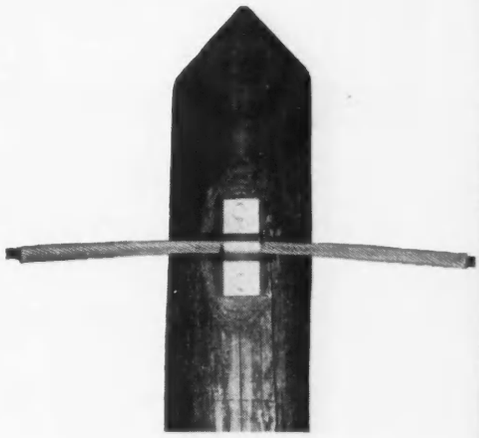
KELLOGG *for Line Supplies*

- Write, 'phone or wire all orders for Line Supplies to your nearest Kellogg Warehouse. Kellogg's stocks of guaranteed line supplies are complete--shipments are made immediately. Save time and money--send *one* order to *one* source--KELLOGG!

Vibration Damper—used on wire adjacent to insulators on pole to prevent fracture from fatigue caused by wind vibration. Made of flexible Polyethylene, and helically slit with approximately three turns to the foot. DETROIT MACOID CORP.



Unusually Durable! The high-insulating value and great tensile strength of the Bakelite used in the Type RO-9u Sub-Station Protector Mounting provides great resistance to breakage from shocks of electrical discharge. COOK ELECTRIC COMPANY.



PLP Tangent Support Line Guards (shown here) for self-supporting telephone cable protect while firmly holding cable in an elongated grip in which the unit pressure is small because of large area of gripping surface. PREFORMED LINE PRODUCTS CO.

Exchange Area Cable for aerial and duct use. TELECABLE* has polyethylene insulation and sheath, excellent transmission qualities. 202 Pair and smaller. Approved by REA. *TELECABLE is a trademark of WHITNEY BLAKE COMPANY.

Kellogg's Standard Outside Plant Handbook now available at special price while quantities last. Reduced to $2.75 a copy with ten or more copies priced at $2.50 each. Every phase of outside plant telephone pole line construction is covered in book.

YOUR NEAREST KELLOGG SHIPPING POINT IS NEVER FAR AWAY!

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KELLOGG DIVISION OF IT&T

A Division of International Telephone and Telegraph Corporation

KELLOGG SWITCHBOARD AND SUPPLY COMPANY

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Here's Proof of Performance...

Pressure-creosoting increases pole life for Consumers Power Company

• In 1931, Consumers Power Company, serving 64 Michigan counties, stopped the use of untreated and butt-treated poles in its rural distribution systems in favor of pressure-creosoted poles. Today approximately two-thirds of the company's poles in electric distribution lines are pressure treated, 80% of those being full length pressure-creosoted Southern Yellow Pine.

The average cedar pole, used until 1931, had a normal life expectancy of 23 to 25 years at the most. The life expectancy excluding losses for other than natural causes, of the pressure-creosoted Southern Yellow Pine poles being purchased today is probably upwards of 40 years, according to George A. Clark, Electric Distribution Supervisor.

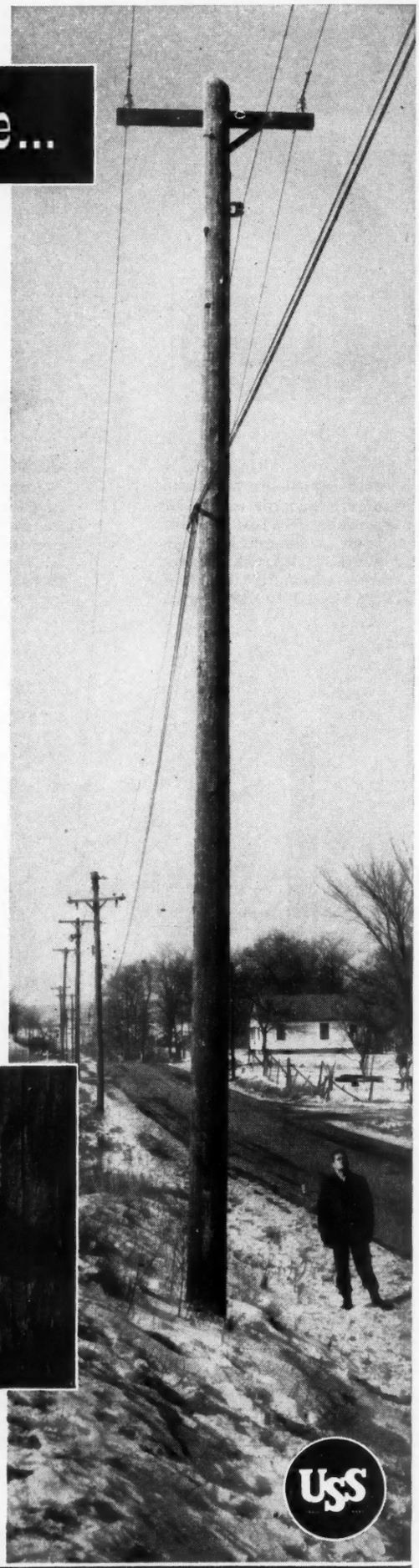
Pressure-creosoting, according to Mr. Clark, gives positive penetration averaging over 80% of the sapwood and with the use of modern vacuum processes after treatment, today's poles are dryer and cleaner.

In the company's scheduled maintenance program, its full-length pressure-treated poles are not to be given a boring inspection until they have been in service 25 years.

Long life and cleanliness go hand in hand when you use pressure-creosoted poles. Especially if USS Creosote is used. If you would like more information, contact the nearest Coal Chemical sales office listed below or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

You can obtain clean pressure-creosoted poles upon specification without sacrificing pole service life.

Close-up, at right, of a Consumers Power Pole, showing 1937 dating nail.



Pressure-creosoted poles in a rural line of Consumers Power Company, Jackson, Mich.

USS CREOSOTE

SALES OFFICES IN PITTSBURGH, NEW YORK, CHICAGO, CLEVELAND, SAN FRANCISCO AND FAIRFIELD, ALA.

UNITED STATES STEEL

In any **MODERN** switchboard installation–

Photo courtesy of Stromberg-Carlson

the choice is **ACCURATE AUTOMATIC TOLL TIME CALCULATING AND RECORDING**

by **CALCULAGRAPH**

Because they quickly save many times their initial cost, CALCULAGRAPH permanent printed records eliminate switchboard detail work, speed service. Accuracy-to-the-second permits collection of all the revenue due on every call. CALCULAGRAPHS are precision instruments featuring high visibility dials, smooth silent lever action. Available in several models, they can be engineered into new equipment by your switchboard builder or easily included in your present set-up. For complete information just call or write.

CALCULAGRAPH COMPANY

HARRISON • NEW JERSEY

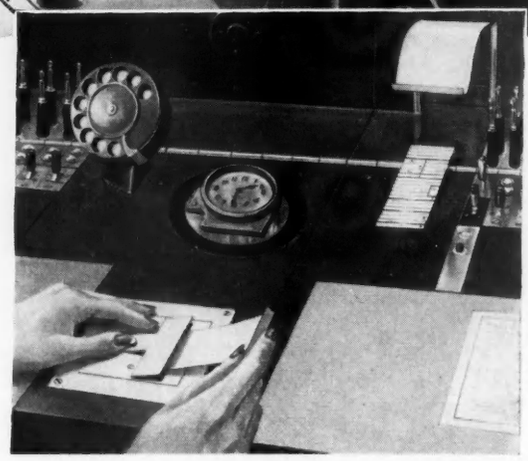
THE STANDARD OF ACCURACY SINCE 1892

Put rates and routes at her fingertips

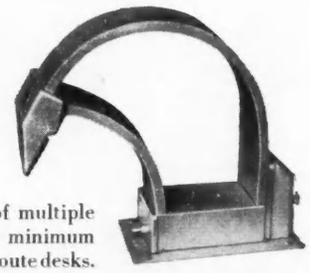
You can with WHIZ Tubes—new, low-cost pneumatic ticket tubes! This fully automatic system rushes toll tickets between switchboard and rate and route desk at 25 ft. per second. Small, compact sending and receiving terminals are as convenient to the operator as her jack panel.

WHIZ Tubes, engineered and installed by International Standard Trading Corporation, associate of International Telephone and Telegraph Corporation, are of simple design—permitting use with both private and toll exchanges. By combining pressure and vacuum, this system reduces space and power requirements to a minimum. There are no cumbersome revolving parts. A unique feature is corrugated tubing—assuring greater reliability by reducing the effects of static, friction and humid air on tickets en route.

Would you like facts and figures on just how much time and money WHIZ Tubes can save in your telephone operation? ISTC engineers would be happy to show you—with no obligation.



Operator inserting ticket in vacuum sender. Pressure senders are similarly flush-mounted in the rate and route desk. Recessed pressure receiver at right, below the jack panel, has just delivered a ticket.



Compactness of this automatic vacuum receiver permits the mounting of multiple banks of units in a minimum of space on rate and route desks.

International Standard Trading Corporation

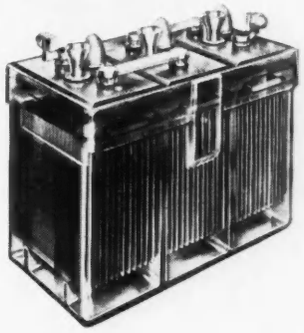
an IT&T ASSOCIATE

22 Thames Street, New York 6, N. Y.

"Battery Performance is my Business!"

Your Gould Field Engineer has one job—to make sure you get greatest possible service from your batteries. In performing that job he sees to it that your batteries are properly cared for and maintained; he instructs your personnel in systematic maintenance methods; he helps you anticipate battery needs; he makes sure you get maximum battery performance.

Gould Field Engineering Service is nationwide. Every member is factory-trained . . . has plenty of on-the-job know-how. There's a Gould Field Engineer in your area. He's as near to you as your telephone. Call him. And when you see him, ask him for the new Gould Plus-Performance Plan material for your battery maintenance staff.



GOULD
Plastic Cell Batteries
for Stationary Service

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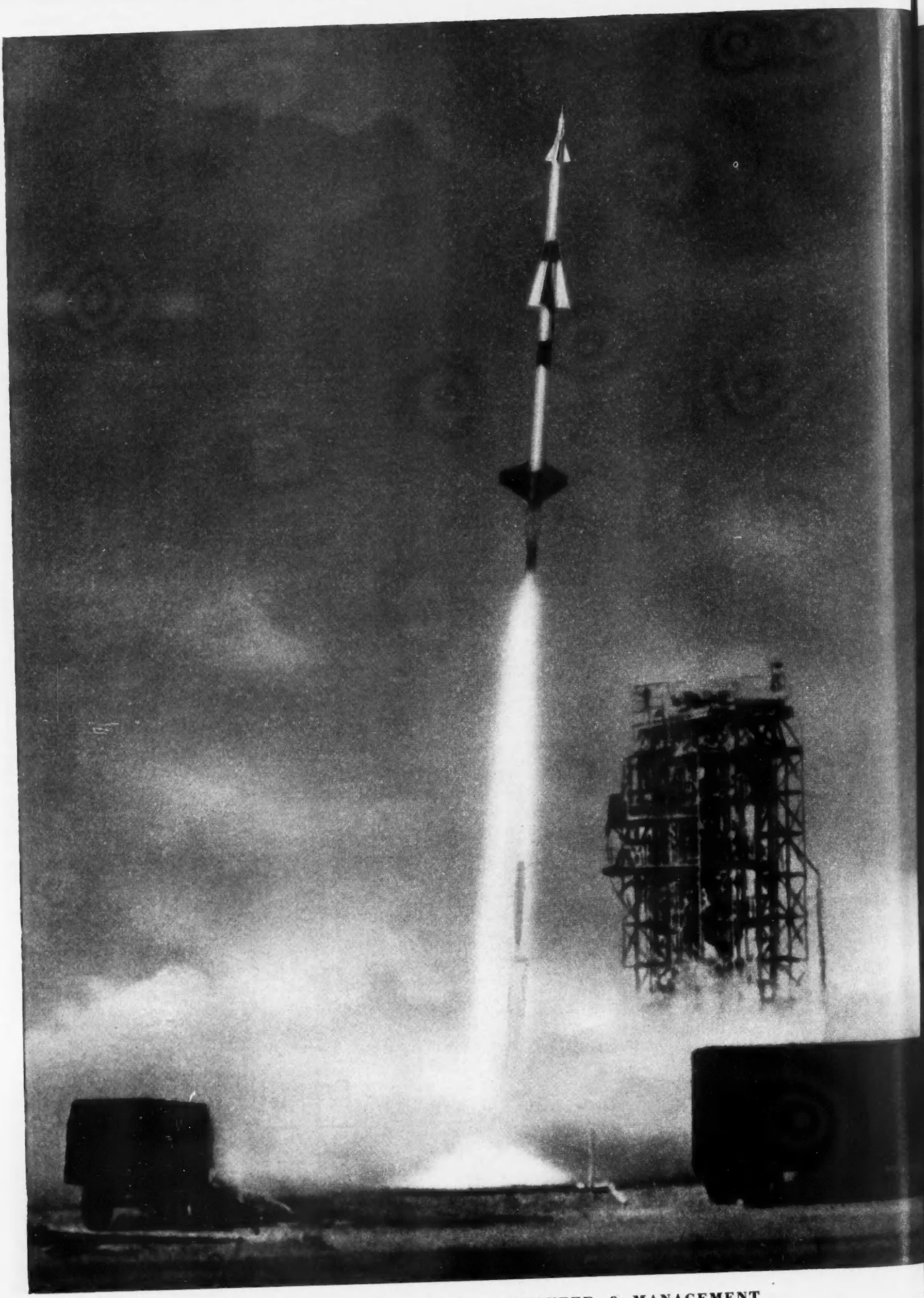
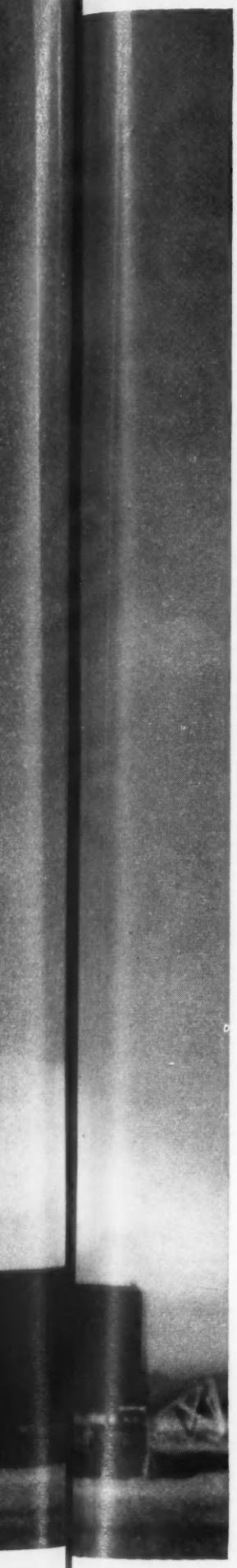
"BETTER BATTERIES THROUGH RESEARCH"

GOULD Batteries

GOULD-NATIONAL BATTERIES, INC.
TRENTON 7, N. J.

Always Use Gould-National Automobile and Truck Batteries





Winged Victory

The NIKE (ny-key) guided missile system—one of Uncle Sam's most fantastic new defense weapons against invader aircraft—is now being installed at strategic locations about the country.

Named after the Greek goddess of victory, it is capable of tracking down and destroying any existing type of plane, regardless of its speed, no matter how high it flies, what evasive action it takes. Nike's brain, which makes this possible, fills several large vans with complex electronic equipment—and employs much of the basic technology used to guide dial telephone calls.

Western Electric worked closely with the Bell Laboratories, the Army, and with hundreds of sub-contractors to produce this great defensive weapon.

NIKE is one more instance of the important contribution telephone technology is making to the national defense.

Western Electric

MANUFACTURING AND SUPPLY UNIT OF THE BELL SYSTEM

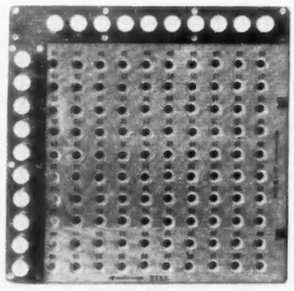
OVER 3000 NOW IN USE IN UNITED STATES, CANADA & HAWAII

THE Murphy (ONE MAN) CABLE TESTER

NOW, for the first time ONE MAN can test to identify cable pairs and do it three times as fast as two men could formerly do the job. "ONE-MAN" splicing crews are now a reality. On new cable work, labor costs are reduced by from 30% to 50%, depending on just how far you are prepared to go in utilizing the One-Man crew.

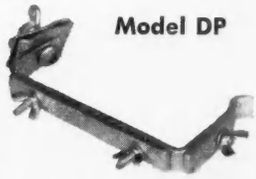
Model CMU Meter Unit

The still further improved Model C Meter Unit, Model CMU. Three Test Sets in one — THE MURPHY ONE MAN CABLE IDENTIFIER, The Buzzer Continuity Tester — and the Ohmmeter for locating trouble.



Model TTB, Combination Tag and Terminating Board

This is the new board that automatically sorts and groups the wires just the way you need them for connecting to the binding posts of the terminal board — only, in this case, the Terminal Board is built right into the Tag Board.



Model DP

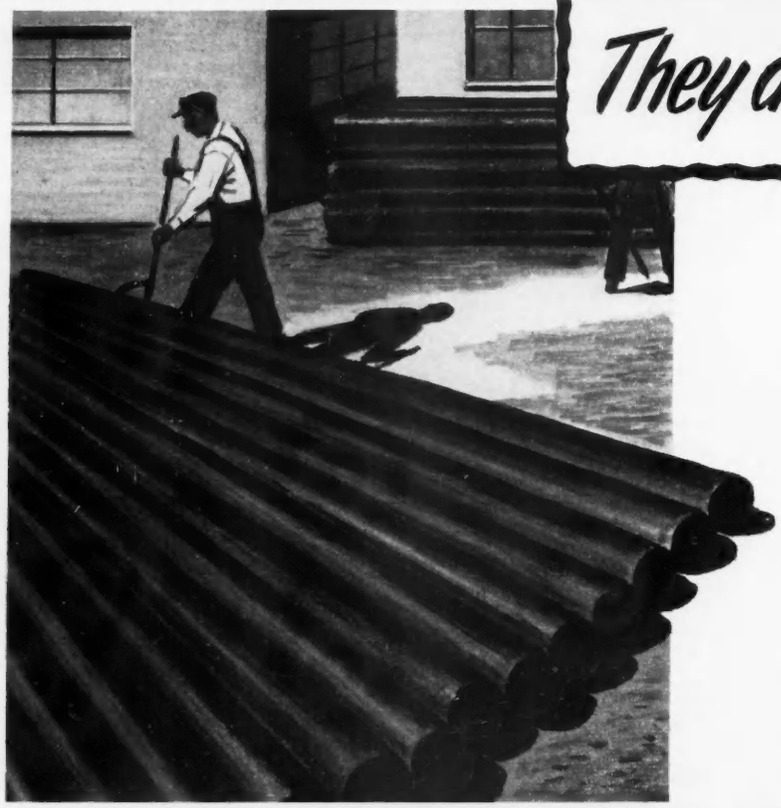
Dual Purpose Clamp

This dual purpose clamp will hold the Terminating Board at any angle, above or below the strand — for greater convenience and speed in boarding the cable. Also handy for other uses.

Durable Steel Cases For All Units . . . . . *Write for prices, terms, etc.*

MURPHY ENGINEERING LABORATORIES, INC.

4419 TULSA, HOUSTON 24, TEXAS — PHONE TW-4000



They all LOOK alike!

TRUE, poles do look alike. But with poles it's just as with pencils and potholders, wise buyers realize that "look alikes" may not perform alike.

Taylor-Colquitt poles may look like many others . . . yet year after year will out-perform others. They assure maximum strength, uniform high quality and consequently last far longer.

Why? Because of Taylor-Colquitt's long established policy of:

First — Make the finest poles today . . .

then — find through research how to improve for tomorrow.

Because of our emphasis on research, our poles are better today than ever before.

When it comes to "look alikes" in poles, two good guides many buyers use are:

(1) Their own experience.
(2) The reputation of the manufacturer.

That's why we are so careful to keep on pioneering in new methods and improving our poles through research.

DISTRIBUTED BY . . . AUTOMATIC ELECTRIC SALES CORPORATION AND LEICH SALES CORPORATION

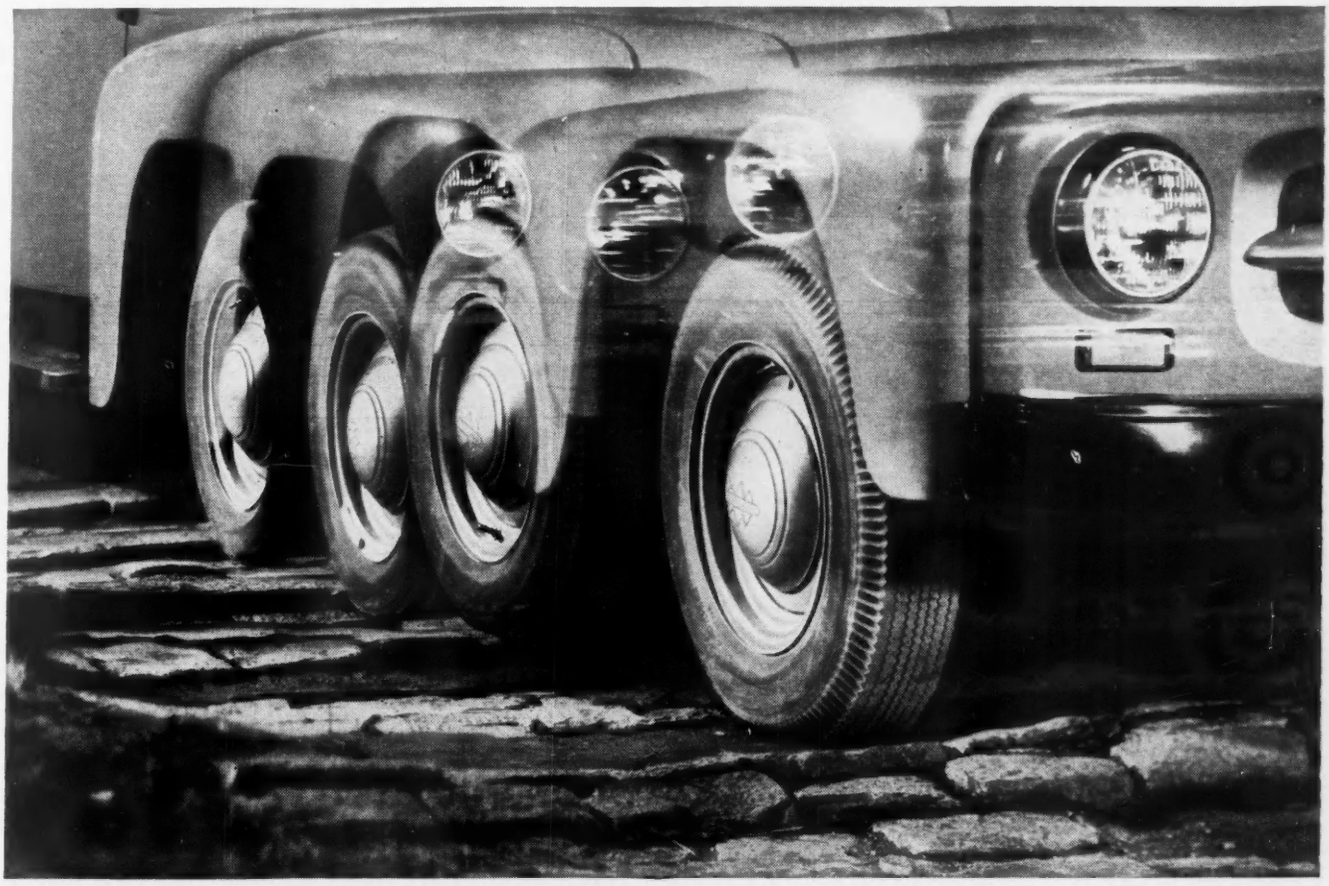
T-C TAYLOR-COLQUITT CO. TIMBER CONSERVATION

TAYLOR-COLQUITT CO.

SPARTANBURG, SOUTH CAROLINA

PLANTS AT SPARTANBURG, SOUTH CAROLINA AND WILMINGTON, NORTH CAROLINA

1,400 crash landings a minute...



Here's a beating your truck will never have to take. This INTERNATIONAL Truck is pounding over the Belgian Block course . . . a torture track so bumpy that, at only 12 miles per hour, it slams wheels up and down 1,400 times a minute—so rugged that drivers are replaced every 20 miles of the 400-mile test.

You save the BIG money in utility service hauling with all-truck built INTERNATIONALS. 9 light-duty models with Service-Utility body, 2 four-wheel-drive models and 9 medium-duty chassis to 16,000 lbs. GVW. Axle and transmission ratios for every need.

to save you the BIG money

We torture INTERNATIONAL Trucks this way to be sure that sheet metal, cabs, springs and all running parts will stand up *longer*. So that our trucks will have utmost roadability, minimum wheel fight, maximum comfort. It's all a part of INTERNATIONAL engineering and design to save you the BIG money — the operating and upkeep money.

INTERNATIONAL engineers are never called upon to adapt passenger car engines or components. They design INTERNATIONALS with extra margins of strength—build them to save you the BIG money in the long run.

Yet with all this all-truck extra value, INTERNATIONALS are competitively priced. Let your INTERNATIONAL Dealer or Branch show you the right INTERNATIONAL for you — *all-truck built to save you the BIG money!*

INTERNATIONAL HARVESTER COMPANY • CHICAGO

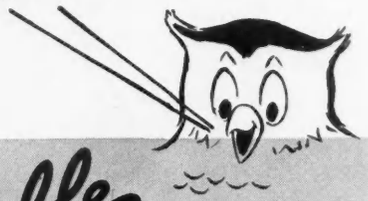
All-Truck Built to save you the BIG money!

Top TV Comedy! Ronald Colman and Benita Hume in "The Halls of Ivy," CBS-TV. See your paper for date, time and channel.

INTERNATIONAL® TRUCKS

International Harvester Builds **McCORMICK®** Farm Equipment and **FARMALL®** Tractors...Motor Trucks...Industrial Power...Refrigerators and Freezers

PROTECTED OR UNPROTECTED HERE'S A "TRIPLE-PLAY" COMBINATION!



Reliable "ST" CABLE TERMINALS

3 Sizes
11, 16 and 26 pair.

3 Mountings
Strand, Pole or Wall.

3 Types
Unprotected,
Cable Protection,
Fuseless Station Protection.

This new line of Reliable Cable Terminals affords a complete range of types, sizes and mounting methods.

While principally designed for attaching to strand supported cable, RELIABLE ST-11 and 16 pair CABLE TERMINALS can be vertically or horizontally mounted on poles or building walls with the aid of separate mounting brackets. The ST-26 pair Terminal is furnished with a bracket for pole and wall mounting. All three are suitable for use with cable systems maintained under gas pressure. For cable protection the ST-P type has No. 506 Protector Units. For multiple fuseless station protection the ST-PS type has No. 504 Protector Units.

CHECK THESE OTHER OUTSTANDING "ST" FEATURES

1. Simplified cover design and closure is weather-tight.
2. One-screw mounting clamps with snub tightening — no loose parts.
3. Stub cable entrance holes at opposite ends for stub reversal.
4. Protector Units are sealed, yet the carbon blocks and lead pellets are easily removed for cleaning or replacement.
5. Choice of lead sheathed or plastic jacketed cable stubs.

WRITE TODAY for Reliable "ST" Cable Terminal Specification R-100.

RELIABLE ELECTRIC COMPANY
3145 CARROLL AVENUE CHICAGO 12, ILLINOIS

Reliable

Telephone Protective and Terminal Equipment for all Station, Line and Central Office Needs.

Over 45 Years Service to the Utilities

Telephone Engineer

EDITORIAL

Telephone Engineer

"Greetings" To a New Emblem

SPURRED ON by the new industry emblem recently announced by the United States Independent Telephone Association (USITA) we took a good, close look at the industry's national advertising program. What we found pleased us. In fact it pleased us so much that before saying "Hello" and "Welcome" to the new emblem, we believe a review of the facts is in order.

At the national level the Independent telephone industry's advertising is now and has been (for the past 15 months) appearing in magazines having a monthly circulation of nearly five million. The constant appearance of USITA signed advertisements in five national publications, including the industry journals, is, we feel sure, acquainting many U. S. citizens with the facts of life about the Independent telephone industry.

In fact we have seen ample evidence of the programs beneficial effect in letters from readers of USITA advertising. Some readers, we're sorry to report, were surprised to learn that 5,100 Independent telephone companies own, operate and service over 8,000,000 telephones.

Actually we're not surprised that the readers were surprised. For years we've been surprising friends and new acquaintances with such facts. We have seen the same blank stares many industry members have seen when they identified themselves as members of the Independent telephone industry. We've heard the same expressions of amazement others have heard. And on an occasion or two, (at least) we, like other industry associates have had to provide documentary proof to a few "scoffers" who just wouldn't believe the Independent industry is the big and important part of the nation's communications' network it is.

But, today, thanks to the national advertising program there are fewer blank stares and expressions of amazement. Also, we have noted a pleasant reduction in the number of hard-to-convince "scoffers."

This is all to the good. Just like the constant drip, drip, drip of water has its effect, so has the constant appearance of industry advertisements in national publications had its effect.

And now, we believe, the introduction by USITA of a new emblem for the Independent telephone industry marks anothr step forward. For some time we, along with others, have recognized the need for a single, simple, easily-recognizable emblem for universal use by members of the Independent industry. It seemed obvious such an emblem would, when put to use by USITA members, enable the users to tie-in their companies with the impact of the national advertising and be identified as a part of the Independent industry. Also it seemed to us a proper emblem put to work by Industry members would enable Independent companies to solidify themselves as a group without destroying any individuality.

Those things, we believe, are worth doing.

Like USITA we hope Association members will put the emblem to work. Obviously its everyday use in company advertisements, brochures, catalogues and on letterheads, customers' bills and company trucks will serve to properly and promptly identify each emblem user with the telephone industry's national advertising program.

We have the feeling such identification is important. It seems to us a company which identifies itself with the national advertising program, by putting the emblem to work on the local level, is bound to increase its own prestige in the community it serves.

It seems only reasonable to believe a subscriber who sees the new emblem in his favorite national magazine just might sit up and take better notice of his local telephone company *if* he sees the emblem repeat itself on the company's bills, letterheads, etc. That might well be one of the major benefits which will come to users of the new emblem.

So we hope the new emblem will have a busy time for itself. Use of the emblem in the industry's national advertising will, we believe, add to that advertising. We feel certain of that.

But we are equally as certain the emblem's effectiveness will multiply and re-multiply itself with its constant use by USITA members.

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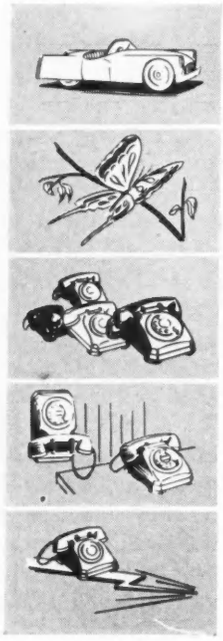
Now that COLORED telephones are . . .



the trend of the day

and beautiful

and in complete selection

and convertible from desk to wall

and available immediately

here's how to "sell" them to your subscribers

Colored telephone instruments produce extra revenue. But subscribers have to be *told* of their availability and have to *see* their beauty. Here's the answer!

Promote your sales of instruments in the exciting new solid colors and two-tone color combinations with these attractive merchandising aids. Beautifully printed . . . with the telephones photographed in *natural color,* in sparkling settings. The short sales copy is addressed to *your* subscribers, in *your* words, and suggest they phone *your* business office for full details.

And these business-boosting folders are envelope-size—ideal for use as bill stuffers and mail enclosures.

Fill in and mail the coupon . . . put this promotion material to work for you . . . and watch your 1955 profit curve soar.

Stromberg-Carlson® Company

A Division of General Dynamics Corporation • Rochester 3, New York

Sales Offices: Atlanta 3, Chicago 6, Kansas City 8, Rochester 3, San Francisco 3.

FULL COLOR PHONE STUFFER T-152 . . .
Six-page folder illustrating and describing the new telephones in the 8 most popular solid colors. A revenue-builder at $11.95 per 1000 in lots of 5,000 or more; $15.00 per 1000 in smaller quantities.

TWO-TONE COLOR PHONE STUFFER T-153 . . .
Four pages packed with "sell." Features the new two-tone telephones in their beautiful color combinations. Only $9.85 per 1000 in quantities of 5,000 or more; $12.00 per 1000 in lesser quantities.

3-LINE IMPRINTING IF DESIRED . . .
Priced at cost: $4.15 per imprint for first 1000 or less; and only $2.80 per 1000 for additional 1000's.

ORDER COLORED TELEPHONE BILL STUFFERS HERE

Stromberg-Carlson ROCHESTER 3, N. Y.

Please ship at once, and bill us at quoted cost:

☐ 6-page stuffers No. T-152 on solid color telephones

☐ 4-page stuffers No. T-153 on two-tone telephones

Specify: ☐ Unimprinted; ☐ 3-line imprinted at quoted cost. Send samples only: ☐ T-152; ☐ T-153

Company.....

Address.....

.....

Ordered by:.....

SMALLER LIGHTER & BETTER

THE NEW COOK TESTERM DROP WIRE CONNECTOR

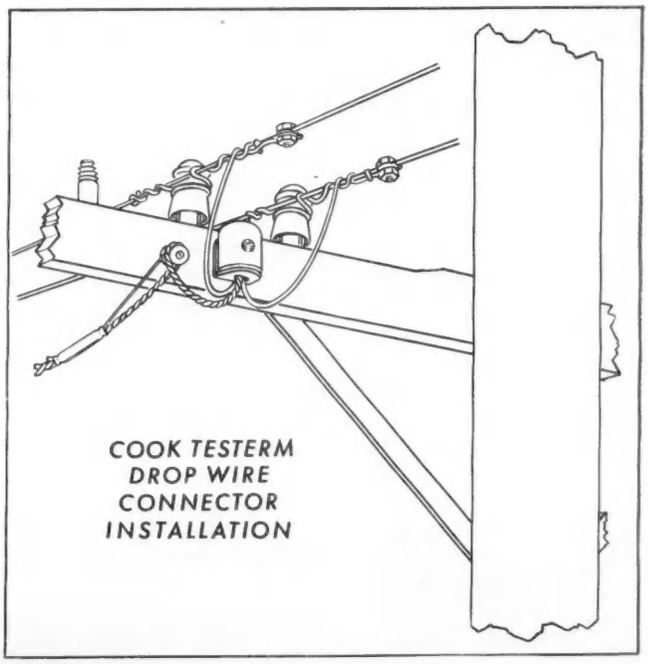
has been redesigned and built of lighter alloys to provide for better insulation, to reduce shipping costs, simplify installation, occupy less space and further improve the connecting methods of subscriber drops to open wire.

Overall dimensions of the unit have been reduced but the spacing between the conductors is the same as the original design.

The base and cover are detachable from the mounting bracket by a bayonet locking arrangement of three Everdur studs that are "upset" to prevent loss of nuts during installation. These nuts fit the standard socket wrench. Wire entrances are sealed by a Neoprene gasket to prevent the entrance of insects, dirt and moisture.

The new Testerm Drop Wire Connector Part No. 653-30 supersedes Part No. 563-1.

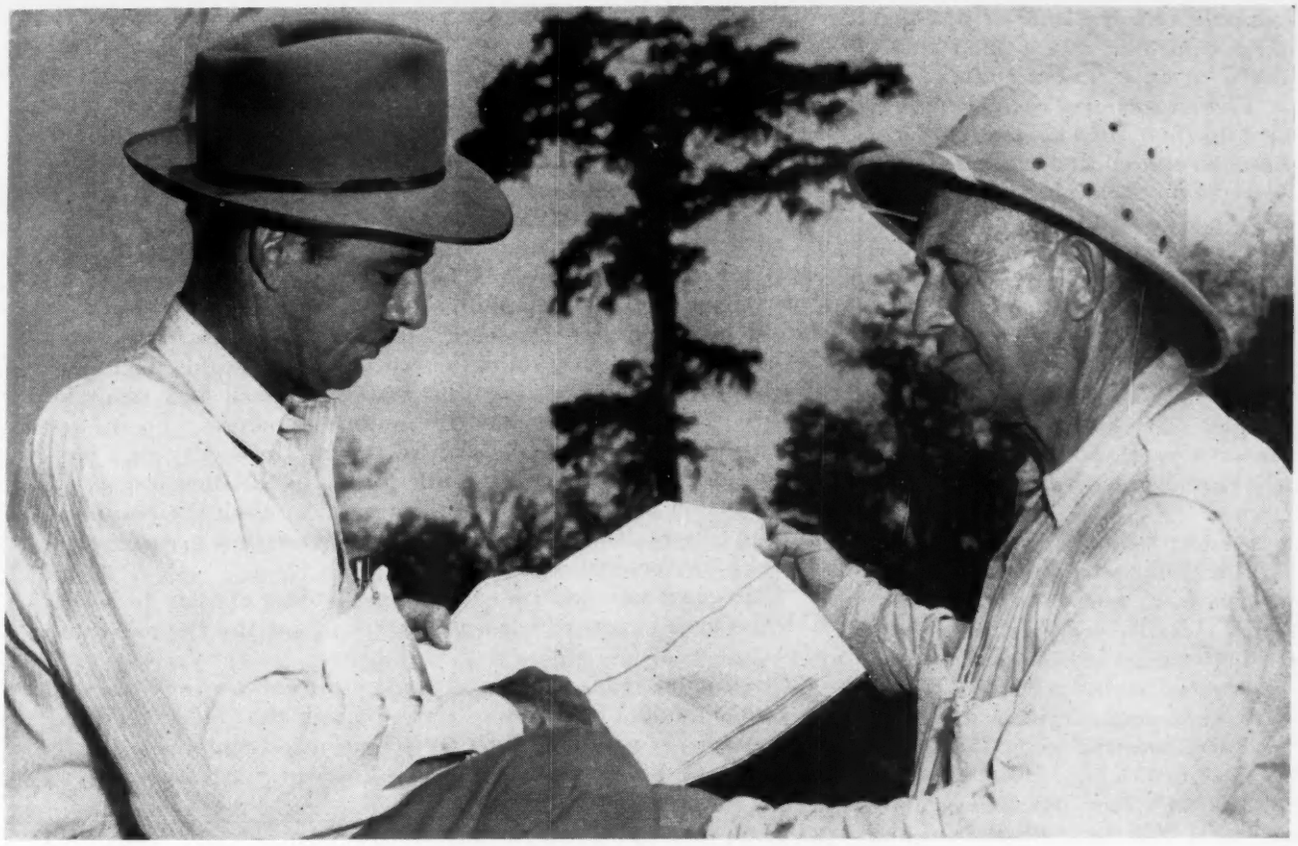
Illustration at right shows the simplified compact installation of the Cook Testerm Drop Wire Connector.



COOK TESTERM DROP WIRE CONNECTOR INSTALLATION

COOK ELECTRIC Company

2700 SOUTHPORT AVENUE CHICAGO 14, ILLINOIS



"No one man can carry all of the knowledge so essential to success of a company."

Our Major Challenge

"WE MUST develop people to meet our future needs—all sorts of people for all sorts of jobs. And they must be better telephone people than you and I. Management must accept responsibility for perpetuation of itself."

By GEORGE E. BREWER*

ON NOVEMBER 18, 1954 at the Statler Hotel in Washington, D.C. the late *Warren B. Clay*, then President of the United States Independent Telephone Association, addressed a distinguished audience of 400 people gathered together at a banquet celebrating the installation of the fifty millionth telephone in the United States.

You remember *Warren* as a truly fine telephone man and as a great president of our national association.

Warren's audience that night was composed of the leaders of our industry nation-wide, and of leaders of our country drawn from the Washington political scene.

It was a distinguished audience.

Warren's speech that night, and his delivery of that speech projecting as it did his deep sincerity to each of his listeners, made all of us proud of him and proud of ourselves as telephone men and women.

Among the things that *President Clay* said that night were three sentences which are germane to my talk to you today because they are so nicely introductory to a talk on the development of people in the telephone industry.

Warren said (and I am indebted to Clyde Bailey for reminding me of what he said) the following, and I quote:

"As I view it the greatness of the telephone industry does not spring alone from the mortar and bricks in its structures, the metal in its equipment, or the architecture of its buildings, important as all these things may be.

"The greatness springs more from the spirit of service of the people who man the lines — the management, the department heads, the supervisors, the operators, the installers, the linemen,

**Mr. Brewer, vice president of Telephone Services, Inc., Chicago, Ill., presented this address at the 1955 convention of the New York State Telephone Association.*

the cable splicers, and all of the other loyal men and women employed in an essential calling.

"The enthusiasm these people put into their jobs comes from a characteristic common to all — a desire to do their part in providing a constantly improved communication service."

In my opinion the major challenge of modern telephone management, particularly in the independent branch of our industry, is the challenge to develop people — develop the kind of people, both men and women, who are so obviously essential to meeting the future needs of the business.

President Clay spoke of us that night in Washington as a great business, *made great by the efforts of people.* We cannot ever afford to forget that such is the case, *that people are essential to our greatness!*

We must develop people to meet our future needs, all sorts of people for all sorts of jobs. *And they must be better telephone people than are you and I.* Better in terms of basic education, in terms of work background and experience, and most essential, in terms of overall knowledge of the telephone business and of the place of that business in the American industrial and social scheme of things.

"Today's Executives"

"TODAY's executives must be broad-gauged, well-read men interested in everything from the Bible to bookkeeping. Yet it is ironical that this age of specialization seems to be developing some bosses who often are disinterested in ideas and events not directly related to their jobs . . .

"But President Wilfred D. Gillen of the Pennsylvania Bell Telephone Company should be applauded by every American taking a wiser view. He realized that the young executive, despite his technical know-how, needed training that would prepare him to make the broad decisions required by modern business. So he has sent 36 of his bosses-of-the-future to the University of Pennsylvania for a full-time, 10-month course in the liberal arts.

"The plan has been termed a 'success' by both the company and the University. Course 'graduates' agree they are prepared to make 'better decisions.'

"Our great universities certainly provide a climate in which Chicago area firms, which want to, could use the Pennsylvania plan.

"Intelligent leadership is a cornerstone of business as well as government. Everyone — the bosses, the nation and the underlings — would benefit by schooling executives in logic, esthetics, philosophy and ethics."—*Chicago Sun Times.*

"Executives of Tomorrow"

THE DEVELOPMENT of people in industry is a very broad subject. Today, because of time limitation and because of its primary importance, I will confine my remarks to one area of the subject, that area concerned with the development of those people who will be your executives of tomorrow.

Sometimes one of the most difficult things to do as a business leader, operating in the vigorous, growing full-of-pressure atmosphere that pervades a business such as ours, is to recognize a problem. Once recognized, most problems in business are fairly easy to come to grips with and to at least make some attempt to solve, if not to solve completely.

All too frequently the problem of executive development is not recognized at all or is not recognized until it is too late to do anything really constructive about it.

The problem of executive development and the challenge inherent in its solution is clearly recognized by some big business and by management organizations looking overall at the nation's business community.

Today, however, it seems to me that we are concerned with *how to recognize the need for a program of executive development at the level of an individual company*, and answer the question; *"Do I, in my business, need such a program?"*

Perhaps it would be well for me at this point to give to you a definition of what I am talking about when I speak of a program of executive development in a company.

I mean simply *"those things which the management of a company does to create an overall atmosphere throughout the employe group which fosters and encourages the growth of people desirous of assuming responsibility for the future guidance of the business."* It's just as simple as that.

What I am talking about is a way of life in management. A constructive and meaningful way of life for the business.

Do you in your business need such a program? There is only one answer, be you big business or small business. That answer is a resounding *Yes!*

Having recognized the problem and accepted the need for management development, next we need to decide what is necessary to be done in order to meet the problem. What are those things which management needs to do?

The first thing management needs to do, it seems to me, is to accept responsibility for the perpetuation of itself.

No man or woman, regardless of how great their mental and physical strength, can live forever. And if they do live a long time, they simply cannot carry throughout the period of a long life the same work load which was their joy to carry at their physical and mental peaks.

Wise men and women seek early to perpetuate themselves through younger people, through an early sharing of their work load and their know-how with younger people. A man's greatest accomplishments are frequently not those things which he has himself accomplished but are those things accomplished by those who work with him and carry on after him.

All of us recognize the truth of such a conclusion. It is the same truth upon which our whole Christian civilization is based.

"Have a Program"

ALL WORTHWHILE efforts deserve a program. Management,

therefore, in its efforts to perpetuate itself in the true philosophical sense, needs a program.

Should our program be formal, informal, written, conveyed only by the spoken word, fixed and unchangeable or subject to constant change? The answer to this question depends upon many variables.

The size of your business, the number of management jobs, the complexity of the work to be done are but a few of the more important of such variables.

Since the answer is dependent upon these variables, you must therefore answer the question for yourself and establish your program accordingly.

The important thing is to have a program, expressed to your organization in some understandable way, *and to be working under such a program.*

In the Continental Telephone System we have a management development program. It is partly formal, partly written, talked about frequently and worked at all the time in each one of our companies. It has gone a long way toward providing us with the telephone executives we need now and will need later. It is being increased in its scope constantly.

All of our top executives are steadily at work planning for and working at the job of setting up an atmosphere in which those people who desire to grow and expand can grow and expand.

Choosing those people who will be made part of your program after the establishment of the program does not need to be the great problem it is sometimes labelled as being.

A great deal depends on the scope of your development program.

In the Continental Telephone System, executive development as a matter of programming, begins with the first line of supervision. Therefore with us, when a man is first chosen for a position as a supervisor he is also chosen to be part of our program of executive development.

Recently some 62 presidents of companies were asked and responded to the following question, "Do you believe a sufficient number of natural leaders will arise and be ready to take over as executive vacancies occur in a company, or is some definite plan needed to identify and develop these men in advance of the need?"

The National Industrial Conference Board was the questioner.

"Bad Colonels"

"TREES BEGIN to die first at the top. Napoleon is reputed to have observed: 'There are no bad regiments, only bad colonels.' If such statements as these can be applied to business, the importance of executive development becomes clear. A baseball team can afford an extra man or two on the bench for each man in the field. Most companies feel they cannot back up their top people so deeply. But the question can be asked: 'Can a company afford *not* to build an adequate reserve of trained executives to safeguard its future?'

"An increasing number of companies are answering this question in the negative. They argue that the future of a company depends upon the quality of its management personnel more than upon any other single factor. They add that the demands on the management group are becoming heavier year after year because of governmental regulations, technological developments and important social and political changes.

"But where will business leaders of the future come from? And how can they best be developed?

"These matters troubled earlier generations very little. In the past it was said: 'When the president dies, we hire a new office boy — Everyone moves up — Honesty, sobriety and hard work are the qualities an ambitious employe needs to get ahead. Experience is the best teacher — Going to night school helps — The cream will rise to the top.

"Twenty-five years ago probably no company had a program of executive development, as such a program is thought of today. The Horatio Alger or office-boy-to-president formula was generally accepted. And certainly this country produced a host of successful business leaders. Strong men, self-made in many respects, rose to the top in organizations both large and small and they served their businesses and their communities well.

"Now thoughtful business men are asking if the old system can be followed much longer with safety. Of course, character and ambition are still important in business and they always will be. So are the efforts of the individual, both on and off the job, to improve himself. The question is: Are these things enough? Or have changes occurred in business and society that call for a re-examination of our basic assumptions?" — *The National Industrial Conference Board, in its "Studies In Personnel Policy No.* 107."

Four out of five of the presidents replied that they felt that some definite plan is needed; nine said that they felt enough natural leaders would arise and three straddled the question.

Few of them would say, however, that their companies had done the proper sort of systematic planning for selection and *none of them claimed a formula for selection now operating to their complete satisfaction.*

The field, you see, is wide open. The important thing is the program. Selection is largely a matter that falls naturally in line with your honest desire to make the program work most effectively for your company.

If you are willing to make the best effort possible to perpetuate management through others, you will necessarily also make the best effort possible to find top material for your program.

At this point I am hopeful that your curiosity has been aroused to the point that you want an answer to the question, "*Exactly what do you*

even in small tools...

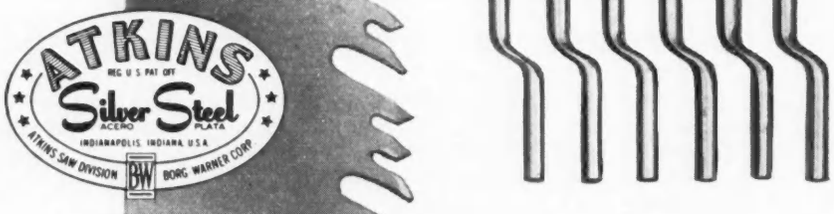
We believe you save money by using the best tools and materials.

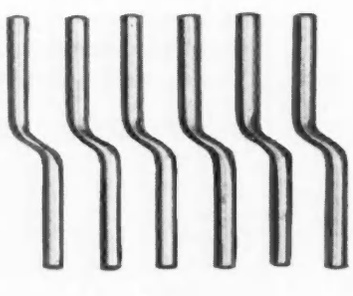
That's why we're proud to sell you tools such as these made by our friends at Klein, Atkins, Greenlee and Nicopress.

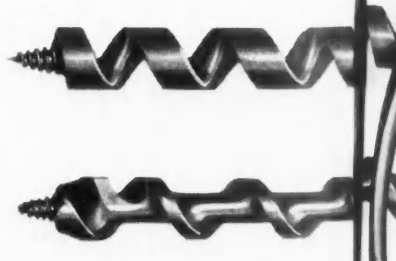
These are representative of the complete line of high quality supplies made by famous manufacturers and available to you from Leich.

You'll like our service too. Helpful, experienced people see to it that your orders are handled promptly. Everything you buy from Leich is fully guaranteed and you'll be pleased to find our prices competitive.

May we hear from you?







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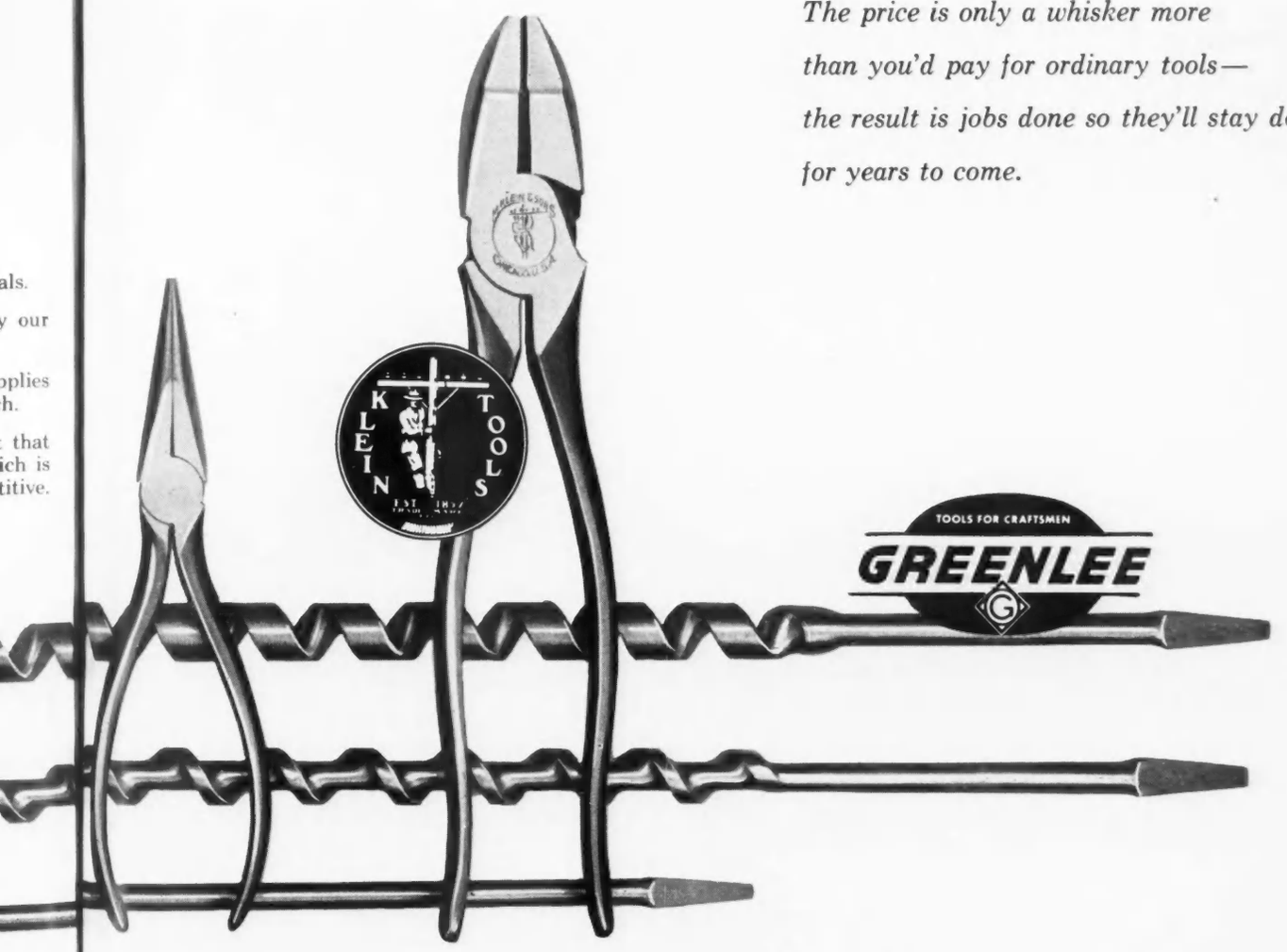
offers the best !

Help your people do better work.
Help them to become craftsmen
—proud of their skills,
of the fine, lasting work they do
for your telephone company.

Give them these real craftsman's tools,
made by companies which are famous
for their quality in workmanship
and materials.

The price is only a whisker more
than you'd pay for ordinary tools—
the result is jobs done so they'll stay done . . .
for years to come.



MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907
LEICH SALES CORPORATION 427 W. RANDOLPH STREET CHICAGO 6, ILLINOIS
PACIFIC COAST: 2611 SAWTELLE BLVD., LOS ANGELES 64, CALIF. SOUTHWEST: 1227 SLOCUM ST., DALLAS 7, TEXAS

GENERAL SYSTEM

mean by a program for executive development?" I hope you are saying to yourselves, "*Stop beating around the bush, Mr. Brewer. Let's get specific!*"

All right, I'll try to answer the question and insofar as I can do so, get specific.

In the Continental Telephone System our program for executive development is conceived and motivated from the very top of the organization.

At the top we are interested in developing people who will be tomorrow's top people; in other words, people who will replace us. These people during their period of development generally serve as executives of the several affiliated operating companies.

Incidentally, all of our principal operating heads, top-side, as of the present time, came from the field companies.

Our program for those affiliated operating company executives is simple in conception but broad and varied in its application.

It begins with a broad delegation of authority to run the affiliated operating company subject only to policy direction from the top of the organization.

It includes exposure to the problems of the entire organization through system-wide conferences in which constant opportunity develops to the participants not only to be informed of problems but to assist in their solution.

These executives are encouraged to participate strongly in community affairs, to identify themselves as good citizens. They become associated with national organizations devoted to management, such as the Research Institute of America, and the American Management Association among others.

They participate as students in university courses devoted to betterment of utility management and as planners with university staffs in the development of courses to train utility managers.

Several of our people have attended the summer course for utility executives given by the University of Michigan. Others have attended or plan to attend the American Management Association Executive Training Course.

These courses are refresher courses. They provide a man with the time and the atmosphere in which he can refresh and re-evaluate the knowledge which he already possesses, to line up his know-how anew. Men return from these courses with renewed foresight and vigor.

Not only are we interested at the top of our organization in these operating executives being trained but we are also interested in the training which they carry on themselves in each one of their companies.

There is an old saw in education that goes something like this; "*If you would have a man know a subject thoroughly, arrange for him to teach that subject to some one else.*" We take full advantage of the wisdom inherent in this old saw.

Regular staff meetings with principal subordinates, weekly, monthly or quarterly, supplemented by special meetings are the order of the day in system operating companies. These meetings are pretty much devoted to telling the story of where are we going, where are we now and where do we go from here. Very little information, if any, including financial information is held back from the participants.

In such meetings the operating head of the company learns his own subject most thoroughly through the process of teaching others. These meetings, too, are one of the principal means by which he establishes himself as the respected and trusted leader.

In larger companies, generally at less regular and frequent intervals and with much less time consumed in the meetings, the District Managers will also conduct staff meetings similar in general pattern.

In several of our field companies all of the first line supervision has been enrolled into membership with the Research Institute of America. Completely free of any company dictation, this management organization works with our people by letter and publication to make them better managers for the company and for themselves.

I realize fully that what I am telling you now, so briefly, about the executive development program of the Continental Telephone System does not make a significant contribution to your fund of knowledge. To most of you what we are doing is undoubtedly old stuff and I am pleased that such is the case. Many of you, in other words, are now providing like opportunities for growth and development in your organizations and perhaps better opportunities.

The important thing about this whole matter is that you recognize what you are doing, not as a hit-or-miss conglomeration of helpful forces at work, but rather as a planned program.

Without such recognition, accompanied by full knowledge in your organization that the program exists, you will not get the results so necessary to your successful future as a company.

Measuring The Effectiveness of The Program

THE EFFECTIVENESS of any program set up by a business must be made subject to periodic measurement. The program costs money, it is set up to do a job, how efficient is it in doing that job and how effectively does it produce an acceptable product?

In measuring the effectiveness of the program of executive development, the first thing to be sure about is that your program is affecting the basic thinking of all participants along the following lines: —

(1) *It is developing their thinking toward the recognition of business as a fundamentally sound and right force* in the economic and social structure of our country, providing needed jobs, needed income to investors, needed work for its suppliers and needed service for its customers.

(2) *It is developing their thinking toward the recognition of the true role of the executive* as a man who is always responsible and always concerned with being right.

(3) *It is developing their thinking toward the recognition that the strongest decisions are always based, not on what is the easiest or most pleasant thing to do,* but rather on a carefully reasoned out conclusion as to what is of the greatest good for the greatest number.

(4) *It is developing their thinking toward the long range view of all things* so that there be full recognition that settlement of a problem today will create additional problems tomorrow.

(5) *It is developing their thinking away from playing favorites* and toward recognition of merit as the sole basis for progress of any kind.

(6) *It is developing their thinking toward a realization that their per-*

sonal progress depends on progress of the business which will carry them along with it.

Second to contributing to the basic thinking of a man along the lines I have just enumerated, it seems to me that your program of executive development should also better his intuitive "*feel*" for managing.

He should be made to feel that people should do things because they are right for the business. His job is to develop and interpret the facts so that they can tell him what must be done.

He should be made to feel that the effort of communicating properly with his people is bound to pay off through the elimination of a great number of misunderstandings and false starts which will otherwise plague him in his managing efforts and hamstring his people in their efforts to carry the business forward.

He should be made to feel that the advancement of people to important posts in association with him is a matter of the utmost importance, that moving a man beyond his ability is frequently a hardship to that man and a real blow to the company's progress.

He should be made to feel that it is essential for him to be able to visualize and utilize fully the "staff concept." No one man can carry today all of the specialized knowledges so essential to the success of a company or business.

How do we go about measuring the people in our program of executive development in relation to these things I have mentioned as being important?

Frankly, I don't know the whole answer and I don't think anyone does, really.

I think their success in running that segment of the business which has been assigned to them to run, no matter how small, is part of the answer.

I think their readily recognized driving urge to help others in management at comparable level with their own level, and to do so tactfully, is another.

Most of all, I think that the urge to accept challenge and to do so cheerfully with confidence of success in every move is the most effective answer of all. The well rounded man we are looking for, you see, will be that kind of a man. — ***George E. Brewer.***

"A Window In Zion"

WE WENT to the Telephone Company's open house. We saw the electronic brain playing tic-tac-toe. The Man of the House was enthralled with the performance but I was watching the deft, well-groomed hands of the woman displaying the machine; she wore a wedding ring and I wondered about her home and family.

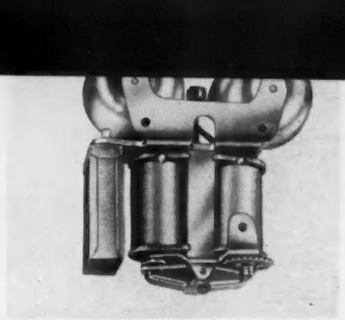
Then we stepped to a desk, where a fair-haired young woman started to explain her part of the business and to show what she filed in her desk. A man asked her a question and she answered it. Then she paused and a blush came quickly over her pretty face and a laugh to her lips as she exclaimed, "Oh now, you've got me mixed up! I've forgotten my speech and I'll have to start all over again." We laughed, too, enjoyed her frankness. After we listened to her little speech we went to a brown-haired, brown-eyed man in a brown business suit who told us how telephone bills are made on an expensive machine. Then a clear-eyed young woman operated the machine for us. To be sure, it was an amazing gimmick, but not nearly so attractive as the girl who handled it so well.

Outside we stopped by a truck with an "earth auger" and other modern attachments. Explaining their uses was a big brown jovial lineman. While the Man of the House listened to an account of how fast the auger could dig a hole, I was looking at the man and thinking that here was the typical lineman, strong, alert, capable and kindly, a person who, in times of disaster and storm, becomes a kind of unsung hero in establishing communications that have been broken.

The Man of the House said, "This is what I want to see," as we went into the equipment building. Here we saw the works; switches and relays, ringing machines, countless colored wires in patterns like quilt blocks, television views of operators at work in Waukegan. We moved through the narrow stuffy aisles between the machinery and listened to technical explanations by neat, patient young men. That is, the Man of the House listened. I only pretended to; to me the working of a telephone is an unexplainable impossibility. A telephone, like many other modern conveniences, is something I use daily without comprehension or appreciation of what has gone into its making. So I watched the polite young men as they talked so intelligently and wondered where they live, who cooks their meals and irons their shirts, what their problems are, and if they were even in love. I knew that they were uncomfortably hot in their immaculate business suits; I sympathized with them and fumed inwardly at the senseless custom which requires them to wear coats. All the latest devices — pink telephones, hands-free telephones, automatic answering telephone — yet they still cling to that old-fashioned silly tradition!

The chap at the door said "Thank you" as we left. Thank you for coming, for listening to them, for taking an interest in their work. I said "Thank you" in return. Thank you for working overtime, for being patient and polite, for sweating in a hot suit in a hot building, for explaining incomprehensible things to a lot of people including me, who didn't even know what I was looking at. The Man of the House came out with a new reverence for engineering. I came out with a new reverence for people. People are the greatest invention yet. — ***By Evadne Scott Beebe, Zion-Benton News.***

Type 80 ringers sound off loud and clear, even at the highest ringing frequencies. Here's your guide for fewer lost calls, less lost revenue—and an end to many, many ringing complaints.



Ringing condenser is mounted on ringer to avoid mistakes when changing telephones from one ringing frequency to another. Helps make maintenance swift, simple, and more accurate.

"*Boy*, you can hear it 'way down here!"

'Way down in the basement, surprised subscribers find they can still hear their new Type 80 Monophones ring. It's a pleasant ring, yet it carries from living room to boiler room—even through the shouting of innumerable little Davy Crocketts. It cuts "DA" reports on toll calls, helps avoid loss of toll revenue.

Type 80's ringers are a new, improved design. Their gongs are especially pitched to give a sound that conquers distance and noise. Their coils are highly sensitive, even to low ringing voltages on long, heavily-loaded rural lines. Straight-line ringers come with volume control (if you wish) that the subscriber can adjust as easily as his radio or TV. Lines served by Type 80's are quieter, because the high impedance ringers do not cause unbalance and induction of noise.

No wonder telephone men say it's goodbye to ringing complaints when you standardize on Type 80's. And they're praising Type 80's remarkably clear transmission, low maintenance, "jiffy" installation, and smart styling as well. Send in your order for Type 80's today. Address: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or call HAymarket 1-4300.*

AUTOMATIC ELECTRIC

ORIGINATORS OF THE AUTOMATIC DIAL TELEPHONE

Type 80 Monophone—the Telephone you designed

Questions and ANSWERS

Conducted by Jay G. Mitchell

IN THIS ISSUE Mr. Mitchell discusses: — (A) An incomplete inquiry about a hybrid coil; (B) An important inquiry which is not answered in this issue; (C) An interesting inquiry for instrument manufacturers; and (D) Shop repairs on telephone instruments.

QUESTION: *I have a question I would like to ask JAY MITCHELL. We have two repeat coils, W. E. 173 and want to loop them up so we can make a hybrid coil out of the two of them and connect 20 miles of copper wire to a carrier circuit with a net. See enclosed schematic. Can you tell me where to connect the line and net and modulator in and demodulator out? Thank you for the information.*

ANSWER: This inquiry has not been answered as soon as desirable because of the volume of work that has been referred to QUESTIONS AND ANSWERS during the last few months. For this delay regrets are offered.

Examination of the schematic sketch enclosed with this letter does not prove of value because the number of terminals shown is not correct for the Western Electric 173 repeating coil. Western Electric 173 repeating coil has 6 windings of which 4 are exactly balanced and are connected to terminals as follows:

One winding to terminals 11 and 12.
One winding to terminals 7 and 8.
One winding to terminals 3 and 4.
One winding to terminals 9 and 10.

These four windings are carefully balanced each with the others in the same group:

One winding to terminals 1 and 2.
One winding to terminals 5 and 6.

These two windings are carefully balanced with each other.

It is hoped that this information may be of some help in this project but it is not possible to be specific until more complete data as to what it is desired to accomplish is furnished. For instance, the mention of a hybrid coil indicates that a repeater of some sort is planned. If so some additional equipment will be required for the purpose. The basic principles of the telephone repeater are very simple and can be easily understood. However, there are so many differing types of telephone repeaters that it is impossible, on the information supplied, to offer any useful suggestions in answer to this query. It is thought that this correspondent will send in another letter giving the particulars. For instance how many telephone physical circuits are involved, how many carrier channels are to be served, what is the character of the physical circuits, are there to be any intermediate stations served between the terminals of the carrier channels, how much and what kind of cable is involved and other details. It is suggested that this telephone company interview the engineer of a neighboring large telephone plant. If this is not agreeable the complete situation might be submitted to the manufacturers of some of the packaged carrier equipment. In any event the details must be assembled before any intelligent suggesitions are possible.

QUESTION: *We have carefully followed the series of discussions on "The Decibel Calibration" and have succeeded in reaching a more satisfactory understanding of this subject. Some of the results are not yet entirely clear although our company has purchased a multitester for our use and this instrument is calibrated in Decibels along with several other scales.*

We have tested the calibration using a dry cell, which has a voltage of about 1.5 volts, and as a result we feel sure that the decibel scale is on the basis of "0" Decibels for a voltage of 1.730 A. C. which agrees with the "A" curve of the graph recently republished in TELEPHONE ENGINEER AND MANAGEMENT. *We have used our multitester in judging the condition of magneto telephones and find that a good telephone with fresh batteries will have an output of 20 or more Decibels. We are experiencing a little trouble, however, in some other applications of the new instrument but we feel confident that we shall soon acquire the knack of using it with great benefit to our service.*

Can you devote one installment of the current series to the rating of toll circuits as to their transmission value? Any information on this factor in maintaining both local and toll service will be very much appreciated.

ANSWER: The rating of toll circuits as to transmission efficiency is based, of course, on the same general electrical principles as those that have been discussed in the installments of the material on the "Decibel Calibration" of the "Multitester" type of instrument. As the instrument with a high sensitivity is more accurate and more satisfactory than one of lower sensitivity it is not possible to set out any general rule as to the effective-

ness for different types of test. This means that with a better high grade type of meter the field of possible satisfactory applications is widened. The multitester type of instrument is useful in the humdrum operations incidental to plant and equipment maintenance. It is not recommended for the measurements that must be made when the overall effectiveness of telephone transmission circuits is to be determined, however. Remembering that the same principles apply a short outline of the method of rating existing circuits follows.

In general an alternating current at a frequency of 1,000 cycles per second is sent out over the circuit that is to be rated for effectiveness. This alternating current is generated by a motor driven alternator and this alternator is designed to deliver a practically pure sine wave. The power sent into the circuit that is under test is carefully and accurately metered (the conventional power for this purpose is usually 0.001 watt) and the power received at the other terminal of the circuit under test is measured. With these two values the power ratio of the delivered power to the sent power is translated into Decibels by the methods outlined in the series of articles that have been published.

The method very sketchily outlined is not used, however, in some cases. At times it is more convenient to set up the test and, by using a substitute portable transmission load, to determine the power dissipated in the test circuit by adjusting the portable artificial load to show the same measured power consumption as the circuit under test.

The underlying principles are exactly the same as those that have been set out but more sensitive equipment is needed in the circuit rating test and considerable more skill and experience.

If you desire a discussion of the circuit rating procedure please write in again.

QUESTION: *We have been asked to consider the purchase of a multitester type of maintenance equipment and have been very favorably impressed by the general appearance and reasonable price asked. However this instrument has no Decibel calibration but we have been assured that its A.C. voltmeter scales afford plenty of range for Decibel measurements. In view of the material already published in the series on* THE DECIBEL CALIBRATION *this seems to us to be a reasonable claim but we would appreciate your comment either for or against this statement.*

ANSWER: A. C. voltages can be converted into Decibels or Dbms very easily by the application of the conversion tables that have been published in TELEPHONE ENGINEER & MANAGEMENT. This conversion is also very easy within special limits by using the graphs showing the relation between Decibels and A. C. voltages for both the 500 ohm and the 600 ohm loops. However an instrument of high sensitivity must be used because instruments of low internal impedance introduce error. This has been discussed fully in preceding installments. High impedance, appropriate scales, and accuracy are, however, essential. Volt readings taken on such an instrument can be recorded and later converted to Decibels or Dbms. This computation is very easy by using the tables already published or the graph which was drawn for exactly that purpose.

"How's this?...You find the guaranteed annual customers. I'll give *you* the factory—you pay *me* a guaranteed annual wage!"

QUESTION: *Is it possible to use the Decibel Calibration in the repair shop for testing the operating condition of telephone instruments before placing them in stock for reissue to the installer? In our shop it has been the custom to short circuit the telephone terminals and then start the instrument to "howling." It was thought to be in satisfactory repair if it could be made to howl by placing the receiver at the lip of the mouthpiece with the instrument short circuited.*

Now our subscribers are demanding the hand telephone type of instrument and the old system of testing has become impossible. We are a very small telephone company and have always given very good service to our patrons. All new telephones purchased are of the so called "European" type now both for common battery and magneto installations.

ANSWER: The determination of the "ouput" of the telephone instrument is, obviously, one field in which the meter having a Decibel Calibration can be made of the greatest possible value. This inquiry, however, does not set out the type of meter that this company proposes to use and, for that reason the reply must be made very general with the suggestion that the details be listed in another inquiry if this reply is not sufficiently complete.

The classical concept of the essential transmission conditions for wire are as follows:

Total from station to station 30 Db.
Total per substation loop (6 Db. per loop) 12 Db.
Total per terminating loop 18 Db.

In the type of service outlined in this inquiry an A.C. voltmeter of at least 10,000 ohms per volt with a 0-60 volt scale can be employed very satisfactorily and for shop purposes the readings obtained, in A.C. volts, may be used on a comparison basis and need not necessarily be equated into Decibels.

This interesting inquiry represents a commendable desire to substitute technically correct methods for "rule of thumb" methods and, if the method briefly set out is adopted, will promote the establishment of standardized conditions in the repair shop.—***Jay G. Mitchell.***

Need Help?

IF YOU'D like quick help and technical and helpful opinion on some question, a postcard will bring you a reply. Or if you're in a hurry, please send along a stamped self-addressed envelope for immediate reply.

Ocala, Fla. toll office of the Florida Tel. Corp.

A Practical Guide For Training Traffic Employes

By RUTH E. RICHARDS

In PART V of her article, Miss Richards discusses that part of the student supervisor's job known as "floor activities" or "management of a division." Part IV of this article appeared in the July issue of TELEPHONE ENGINEER & MANAGEMENT.

"Teaching is not filling a bucket — it is lighting a lamp."

***Caution*: "*Men at Work*"**

YOU'VE SEEN such signs many times posted along a roadway where workmen were going about their job — a job that from time to time required that they be in a traffic lane. Such signs have been a source of jest for a long time, but unjustly so. Work honestly performed is serious business and the performance of the individual learning to do a job well merits consideration.

This brings us to our student supervisor, who in this chapter of our training discussions will be coached in that part of the job termed "floor activities" or "management of a division." This latter term is most frequently applied to the larger office where a supervisor is assigned to a particular section of the operating room and is responsible for the management of the work at a given number of positions. The principles of good management are the same, however, whether applied to a few positions or to many; the application of these principles will depend somewhat upon local conditions, the type of switchboard, and upon company policies.

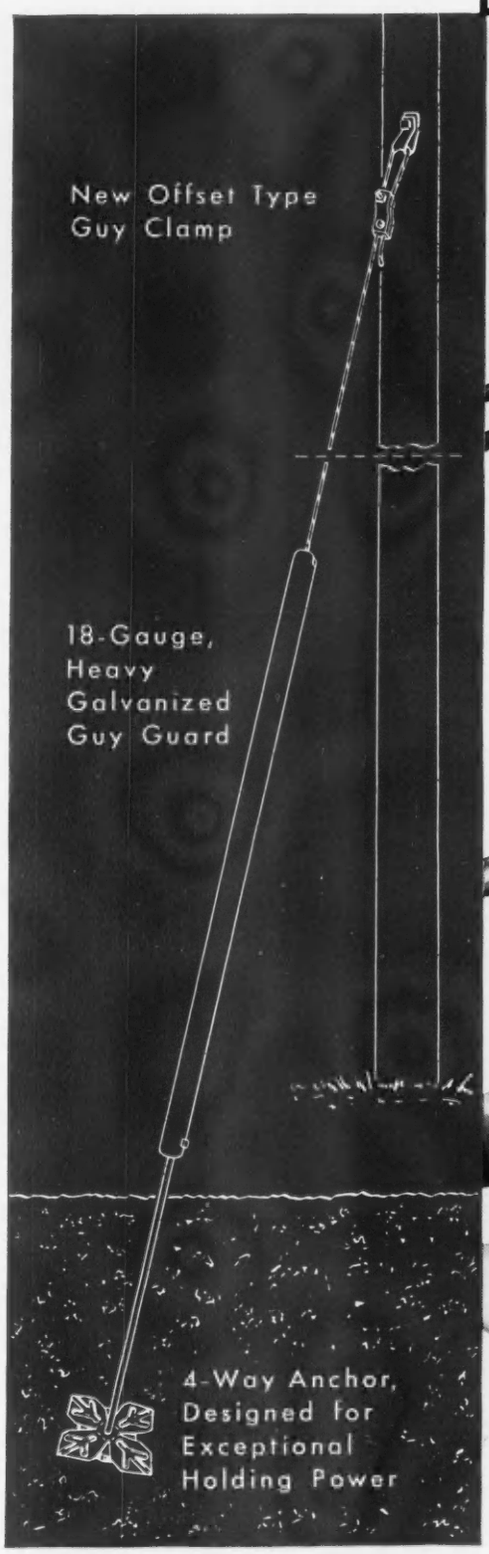
As applied to the Traffic Department, we think of management as a means of accomplishing a purpose — the purpose in this case — service to customers, but in a broader sense than the work done by the operator at the board. Proper management allows supervisors to spend more time analyzing the work of individual operators and correcting the conditions which need attention.

There are many opportunities for operator instruction and follow-up, which an alert supervisor will see in the course of day-to-day supervision.

Successful supervision can be carried on much of the time at a distance of five or six feet back of the operators. This permits the supervisor to be plugged in with an operator, listening to her handling of calls, and at the same time observe the work of other operators and watch traffic conditions.

It is considered generally desirable to provide an operator's chair (adjusted to fullest height) or a supervisor's chair (a chair of higher than ordinary seat height — generally not adjustable as to height) placed about six feet back from the line of the board. This chair may be used by the supervisor when observing the work of operators. The amount of time the supervisor occupies the chair will depend upon the experience and ability of the force, the set-call de-

LINE CONSTRUCTION MATERIALS
To Meet Your Guying Needs
OFFSET GUY CLAMPS, GUY GUARDS, ANCHORS



L-M's New Offset Guy Clamp

Two sizes: Cat. No. 221522A2 for 5/16" to 1/2" Guy Wire
Cat. No. 221522A1 for 1/4" to 3/8" Guy Wire

Here's a new guy clamp design with superior holding power—in excess of the breaking strength of the strand accommodated.

The offset grooves tend to snub the cable under load, effectively restraining the slip of the cable.

L-M's new offset guy clamp saves on initial cost and installation time.

L-M's Guy Guard *clamps firmly*

Cat. No. 280024B1 Length 8 Feet; 280024B2 Length 7 Feet

L-M's guy wire protectors have a tight anti-rattle hook at upper end and unique anchor rod clamp at lower end. Position of bolt on side of protector facilitates tightening of lower clamp. No loose parts to fall out.

Body is 18-gauge steel with a heavy hot-dip galvanized coating to assure long-lasting protection. Available in two lengths.

L-M's 4-Way Pressed Steel Expanding Anchors

designed for exceptional strength

Catalog Number	Nominal Holding Power Class—Pounds	Anchor Rod Diameter—Inches	Minimum Mechanical Strengths, Pounds
200026B1	6,000	5/8, 3/4	16,000
200026B2	8,000	5/8, 3/4	21,000
200026B3	10,000	1	24,000
200026B4	10,000	5/8, 3/4	24,000

Two-piece design . . . The four blades are formed of a single piece of steel and coordinate with the sturdy base plate to develop maximum holding power.

Blades are designed to provide minimum resistance to earth penetration during installation and maximum resistance to pull-out when in expanded position.

These anchors have been thoroughly tested and approved by major utility companies. You can depend on them to hold!

Thousands of Line Construction Specialties

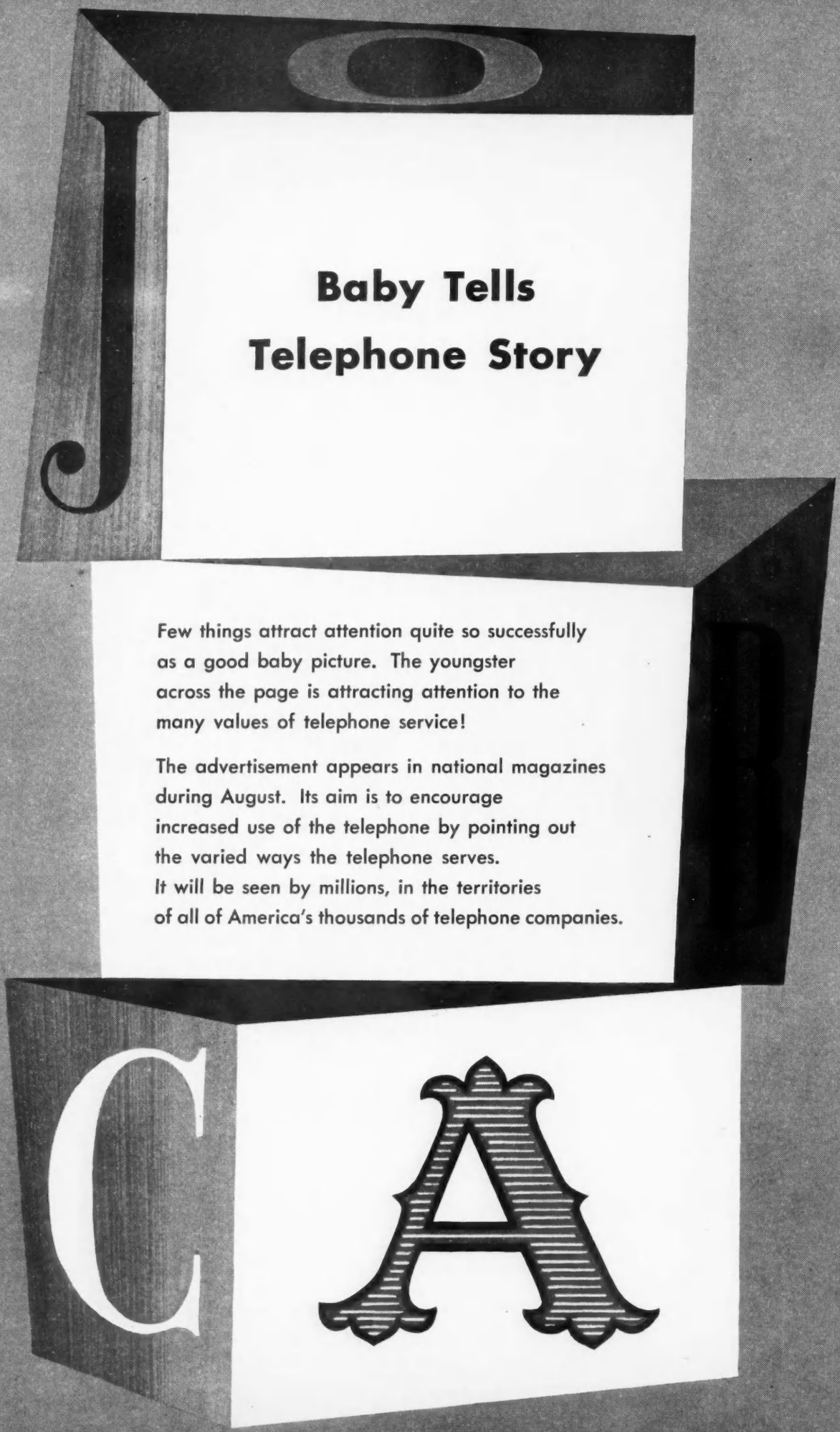
These are just a few of thousands of L-M line construction specialties warehoused nation-wide to serve your needs. Contact your North Electric Manufacturing Company or Kellogg Switchboard & Supply Company representative, or write Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division). 231A

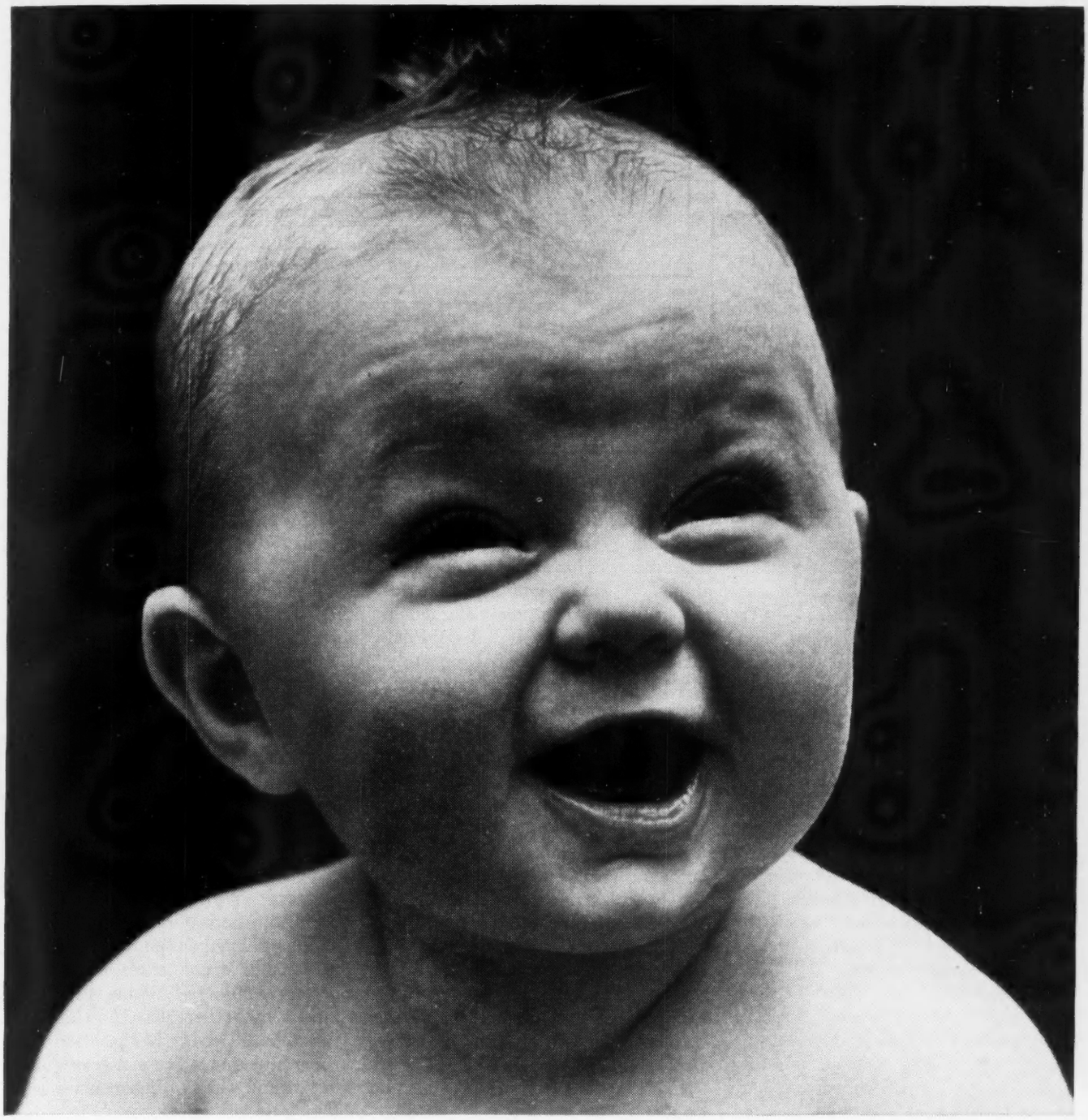
Sold for L-M to the independent telephone industry by

LINE MATERIAL

KELLOGG Switchboard and Supply Company

AND


J
Baby Tells
Telephone Story
Few things attract attention quite so successfully as a good baby picture. The youngster across the page is attracting attention to the many values of telephone service!
The advertisement appears in national magazines during August. Its aim is to encourage increased use of the telephone by pointing out the varied ways the telephone serves. It will be seen by millions, in the territories of all of America's thousands of telephone companies.
C
A



"YOU'RE TELLING ME!"

"That's a funny one. You telling me what a great thing the telephone is. As if I didn't know!

"Why, I'm one of the main reasons we have telephones in our house. For you can bet your life I keep the folks pretty busy around here.

"Just think! If we didn't have a telephone, Grandma couldn't call up to ask if I had a tooth. And Daddy couldn't talk to us when he's out of town. We couldn't order things in a hurry from the stores. And Mother would be tied down just something awful.

"And suppose one of us suddenly took sick? Or there was a fire? Or a robber, maybe? Well, I don't worry about those things when I see the telephone.

" 'Doesn't cost much either,' my Daddy says. And Mother says, 'I don't know what I'd do without it.' "

BELL TELEPHONE SYSTEM

mands upon her time, and traffic conditions in general.

The list of items covered by the term "floor activities" is shown in *Exhibit Four.*

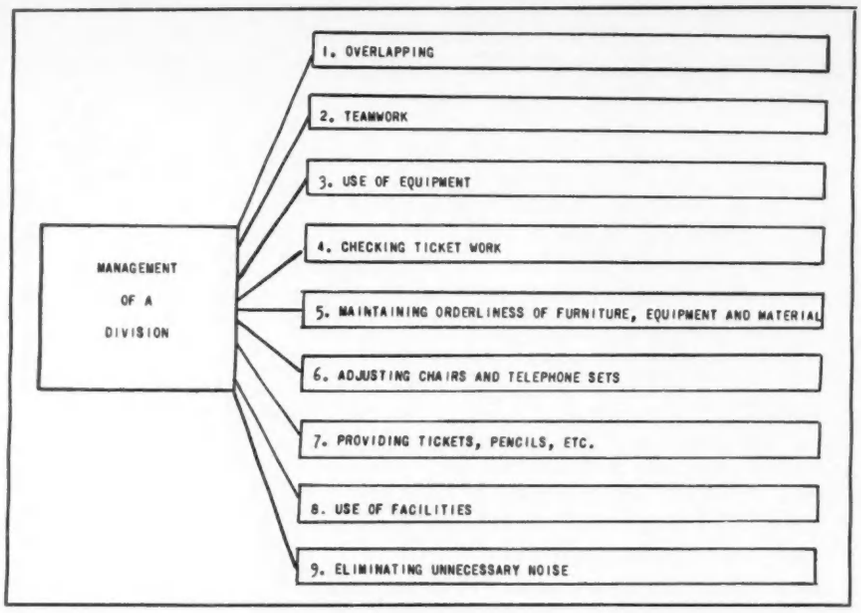

MANAGEMENT OF A DIVISION
1. OVERLAPPING
2. TEAMWORK
3. USE OF EQUIPMENT
4. CHECKING TICKET WORK
5. MAINTAINING ORDERLINESS OF FURNITURE, EQUIPMENT AND MATERIAL
6. ADJUSTING CHAIRS AND TELEPHONE SETS
7. PROVIDING TICKETS, PENCILS, ETC.
8. USE OF FACILITIES
9. ELIMINATING UNNECESSARY NOISE

Exhibit Four.

"Teamwork" Is Important

THE NEW supervisor should develop an awareness of the operations being performed at each position as she moves back and forth in the room, or occupies the supervisor's chair. She should be alert to such conditions as overlapping and teamwork, and understand the true meaning of overlapping, which is the combining of non-effective work with effective work. Non-effective work is that which does not require an operator to be cut in on a connection.

Overlapping means — among other things — keeping both hands busy as long as there is work to be done. It means performing simultaneously more than one of the operations necessary to complete a connection; listening and writing, talking and writing, at the same time. Examples: — (1) Ringing with the free hand as soon as a trunk or circuit is secured; (2) disconecting cords can almost always be an overlap operation, as well as the stamping off of tickets, the placing and removing of sleeves and cord clips when their use is required.

Note whether operators use waiting intervals to prepare for the next call or next step in advancing a call, such as entering their operator number on a few blank tickets in advance, picking up a cord to answer signals or advance the call, inspecting tickets awaiting completion, etc.

Teamwork is joint effort between operators in giving service; it speeds the handling of calls and makes the work easier. For example, pointing out flashing signals on vacant positions to adjacent operators, passing cords to accept such signals, or plugging into jacks for other operators when a long reach is involved.

Impress upon the new supervisor the fact that overlapping and teamwork insure the best use of operator and equipment time. Have her observe one feature at a time until her training has progressed sufficiently that she will naturally be alert to all of the conditions.

Use of Equipment

USE OF equipment is an integral part of an operator's training, but continued supervision is necessary to maintain the most efficient handling. (Other traffic articles in this magazine have covered the techniques of equipment handling for proper usage.) The supervisor should observe ticket stamping. Are the calculagraph levers operated smoothly, with firm pressure, and restored to normal before release? (Noise control, as well as care of valuable equipment, forbids that levers be jerked-to-stamp and released with a snap.) Observe the use of dials, key sets, peg count keys, pencil and cord handling.

Item 9 on Exhibit Four "eliminating unnecessary noise" ties in very closely with equipment handling, for great contributors to noise are dropped cords, ticket carriers propelled with unnecessary vigor against the stops, and reference volumes carelessly "dumped" back into carts or racks, or allowed to fall upon the directory shelf.

Checking ticket work — in the smaller office — can be done very effectively on an incidental basis, as time permits, at the point where tickets are filed. The supervisor will be, or should become, familiar with the operating number and/or handwriting of the operators on the force and thus be able to associate the ticket irregularities found with the operator who handled the call. Minor discrepancies may be corrected without reference, but repeated irregularities or omissions in ticket entries should be noted for corrective action. Avoid at all cost, petty "picking at" minor details that would not affect the billing of the call.

Maintaining orderliness (*Item* 5) is a matter of system and good housekeeping. Unoccupied chairs should be pushed close to the position or desk where they belong with a uniform arrangement of the back of the chairs. Floor fans, when not in use, should be out of traffic lanes with the cords neatly arranged. Directory racks or other furniture pieces should be in place. A haphazard arrangement, or disarray tends to create an atmosphere of carelessness which may in turn be reflected in careless operating habits.

Good management provides that operators' chairs be adjusted, as required, by the supervisor as soon as possible after the operator takes a position. It stands to reason that an operator cannot be fussing with the adjustment of her chair and at the same time be giving her position the proper attention. The matter of quiet and careful chair adjustment is another factor in noise control, as is the correct adjustment of each operator's transmitter for maximum efficiency.

Providing tickets, pencils, etc. (*Item* 7). It seems almost absurd to point out such small routine tasks as the provision of an adequate supply of tickets at each position at all times, yet it is the sum of such seemingly trivial items that creates a smoothly functioning organization. Mechanical pencils are preferred for operators use by many companies for their writing ease and long use interval, but they do require refilling from time to time. It is strongly recommended that such refilling be done

away from the switchboard. A supply of filled pencils for replacement as required throughout the day is most desirable, and the supervisor will assure herself that all positions are properly supplied when she begins her tour of duty. If standard (wood) pencils are used, extra pencils sharpened for use should be available at all times.

Use of facilities (*Item* 8). Day to day supervision includes the responsibility of making sure that circuits, trunks and other switchboard facilities are used to the best advantage — therefore, the student supervisor must become alert to recognize misuse of equipment because of lack of knowledge of correct procedure.

Lesson discussions should cover such examples as how an operator makes the most effective use of facilities by:

(1) Selecting and holding circuits and trunks according to operating practice procedures — making correct use of preferential markings where provided.

(2) Using circuits of proper grade and in correct group.

(3) Ringing promptly and for the proper duration — remaining cut in when required to do so.

(4) Waiting the specified interval for an answer on a circuit or trunk before releasing.

(5) Following the practice of comparing precedence times instead of arguing for use of a circuit.

(6) Taking the next step promptly on receiving a report or directions.

(7) Clearing and releasing circuits and trunks correctly and promptly.

(8) Obtaining all dialing information before selecting a dial circuit or trunk.

(9) Dialing without hesitation.

Outline in detail how these features may be observed while performing other activities and discuss some of the usual indications of failure — emphasize particularly their far reaching effect on both the calling and called customers' service, as well as on the time of operators.

Discuss the effects of incorrect or careless handling of equipment — point out loss of time, fatigue, inaccurate or slow service, customer dissatisfaction, equipment trouble.

Review the proper method of using equipment in the following operations — (1) Selecting next cord to use — reserving end cord pairs for long reaches; (2) picking up cords, changing, disconnecting; (3) testing and plugging into jacks; (4) dialing numbers; (5) operating listening and ringing keys; and (6) use of sleeves — pencils — cord clips, etc.

EDITOR'S NOTE

If you have a subject you would like for Miss Richards to discuss in a future article, drop us a line. We'll pass your suggestion along to Miss Richards.

Emphasize the need for alertness in detecting conditions which might adversely affect the customers' service and the operator's efficiency. These would include: Short, frayed or worn cords — loose fitting plugs and jacks; worn and indistinct records or bulletins — torn index tabs; indistinct markings on designation strips, keysets and dials — dim and burned out lamps.

Discuss the relationship between well maintained switchboard equipment and good service — an otherwise satisfactory operating performance may be impaired by faulty cords, keys, jacks, etc.

Cover the routines for reporting trouble — for taking equipment out of service — for assisting the Plant Department in making routine tests.

Review the need for being alert for indications of trouble which might not be uncovered in normal operations, such as, busy visual failures or idle indicating features.

Stress the necessity for placing equipment back in service promptly when the trouble has been cleared.

Review the conditions under which a transmission report is written and emphasize the supervisor's responsibility in such cases as: —

(1) When a customer cancels a call or reports that transmission is or was unsatisfactory to him.

(2) When an operator is unable to talk with another operator beyond the first intermediate office on a built-up connection.

(3) When an operator is unable to talk with a distant customer on either a direct or built-up connection.

(4) When it is observed at the start of conversation that the customers are unable to talk.

(5) Review the procedure covering a request that a message be repeated by the operator.

In organizing the supervisor's job,

Sending the first transcontinental telegram

One of the epic achievements in American communication history was the completion of the first transcontinental telegraph line in 1861.

It was thought it would take ten years to complete the line, but Western Union amazed the nation by finishing it in three months and twenty days. The lines were joined at Salt Lake City on Oct. 24, 1861. The first transcontinental telegram was sent by Stephen J. Field, Chief Justice of California, to President Abraham Lincoln, expressing the loyalty of that state to the Union.

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it is essential to the efficient use of her time that the "mechanics" of her job, watching the reliefs schedule, distribution of tickets and pencils, etc., be so organized that the maximum amount of time can be devoted to the actual movement of traffic and the coaching of operators. Whether her time is spent effectively or wastefully depends upon having a definite plan in mind for use when not actively directing traffic; that is, a plan to work on some particular feature of the job instead of generalized observation that produces little useful information. Lack of a plan is apt to result in "pacing," "hovering," or other equally ineffective action. Remember — a "hovering" supervisor is apt to create nervous operators.

In our next lesson outline we will take up the "Administration of Force" phase of supervisory work.— ***Ruth E. Richards***

Book Reviews

Employes:

"How To Supervise People," by Alfred M. Cooper. 3rd edition. 254 pages. Price $4.00.

This book is simple, easy to read, gives really practical facts of better supervision to use on the job. It covers all the typical jobs and problems of hiring, discipline, preventing accidents, promoting team work, training workers, delegating authority, labor relations, etc. It makes plain helpful techniques for handling them, with examples of typical problems of hiring and discipline.

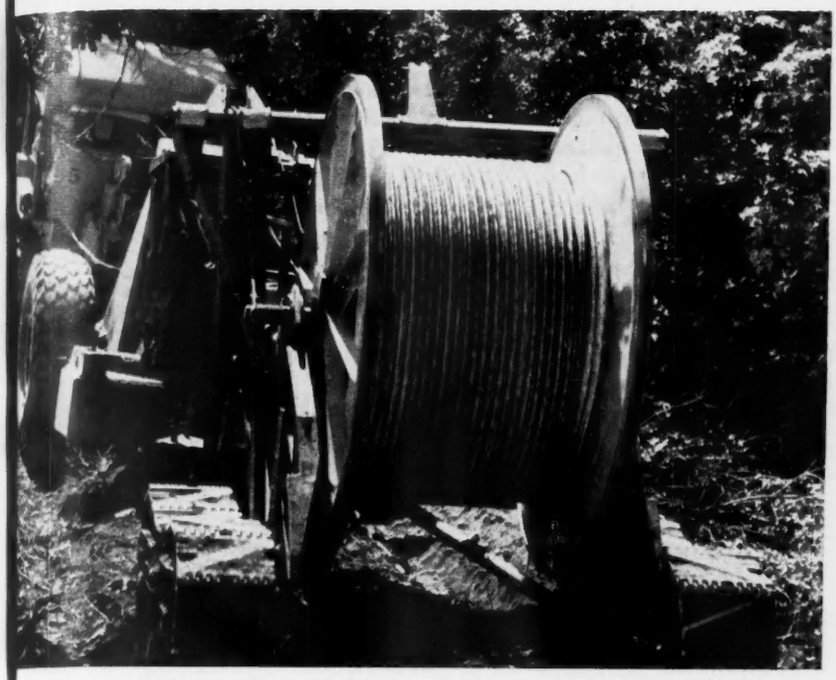
• • •

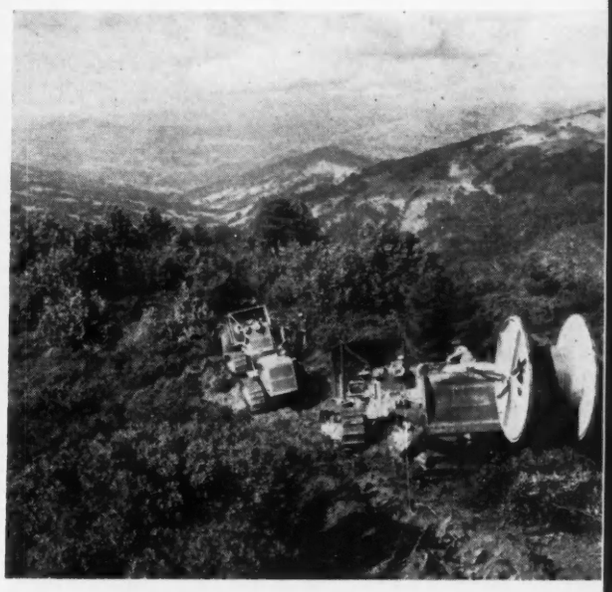
Engineering:

"Modern Physics for the Engineer," edited by Louis N. Ridenour, Vice President, International Telemeter Corp.; Visiting Professor of Engineering University of California, Los Angeles. 490 pages, 6 x 6", 211 illustrations. Price $7.50.

In this book, 19 eminent scientists explore with you advances in basic physical sciences on which tomorrow's engineering is being built.

This book looks at the interior of an atom and the forces holding it together . . . at the world we live in, and the world we cannot see beneath the oceans and the crust of the earth. The outlines of sciences that study the smallest atomic particles and those that examine the vastness of galaxies are presented by men well known in their fields.





"MODERN cable installation methods and equipment are helping today's telephone men reduce labor costs."

Modern Cable Construction

SECTION V-C of Mr. Reed's article discusses metal splice enclosures and stubless terminals. Part V-B of this article appeared in the May issue of "Telephone Engineer & Management. Section VI will appear in the September issue.

By JOHN S. REED

Metal Splice Enclosures and Stubless Terminals

WE HAVE discussed the use of plastic sleeves and cast-resin splice coverings and will now turn our attention to metal splice enclosures and stubless terminals. Such enclosures are either of the split sleeve or solid sleeve construction according to the manufacturer's design. With modern sealing plugs now available, these splice enclosures make a satisfactory and economical substitute for wiped lead sleeves on lead covered cable. They are excellent for plastic jacketed cables where wiped lead sleeves would be out of the question due to the high labor cost of special techniques needed for sealing the ends of the lead sleeve to the plastic jacket.

Metal enclosures can also be constructed with terminal face plates and covers for terminating cable pairs so subscriber's drops can be connected to them. Such terminals eliminate the need for a stub to connect to certain pairs in the main cable. They do not require fastening to terminal poles, but may be supported directly on the messenger strand. This keeps the pole clear of obstructions, which is an advantage in joint construction where climbing space is needed on the poles to enable power linemen to

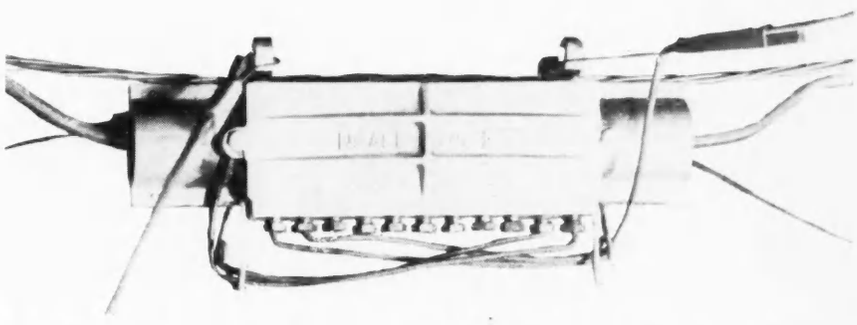


FIGURE 87: — Neale NT30 cable terminal for mounting on messenger strand. Note that drops are distributed directly from brackets on top of the terminal.

reach the overhead power facilities. With the terminal out of the way on the messenger strand, there is less chance for damage to the terminal and cable from contact with the lineman's climber spurs.

Figures 87 and 88 illustrate a pressure sealing type of stubless cable terminal designed for use with plastic jacketed or lead covered cable. It can be fastened to the messenger strand at any desired point for distributing subscriber's drops directly from dual-purpose brackets on top of the terminal with minimum interference from trees or other obstructions. As shown in *Figure* 88, each drop enters through a special grommet and nut which can be tightened to seal out moisture and dirt.

The terminal case is composed of two sections of cast aluminum alloy bolted together at short intervals along the top and bottom edges. Special gaskets prevent moisture entrance through the seams, and compression seals (*Figure* 89) close the terminal ends tightly over the cable. Several different sizes of compression seals are available to accommodate various diameters of cable within a reasonable range. By using a different size of compression seal at each end, one size of cable can be brought into one end and a smaller size out of the other end of the terminal as when it is desired to provide a diminishing point for the cable. A solid packing is also available for sealing the unused end of the terminal when installation is made at the end of a cable lead.

Since gaskets are also provided on the inside of each terminal post, the terminal is made gas tight and may be maintained under gas pressure if required. For pressure testing, filling with dessicant, and injecting pressure sealing compound (for gas dam), the terminal case is provided with three threaded holes and plugs.

As indicated in *Figure* 90, this terminal has an ingenious self-stripping feature which enables the cable conductors to be connected to the terminal posts without removing the paper insulation or piecing out the conductors. The conductors are simply attached by laying one wire in the slot of the special stud on the post and placing a lead washer over the stud, followed by a brass washer and nut. When the nut is tightened, the lead washer cold flows, stripping the insulation and making contact with the bared conductor. The wires are not cut.

If it is necessary to move a terminal, the cable conductors can be removed from the slotted studs and the broken insulation repaired by wrapping with a piece of vinyl electrical tape over each conductor. Two back halves of the terminal case can then be fitted over the opened cable to form a pressure type sleeve. This method can be employed to insulate and seal any cable splice not requiring a terminal in this location. The chamber is large enough to accommodate a straight splice.

It is claimed that this pressure type

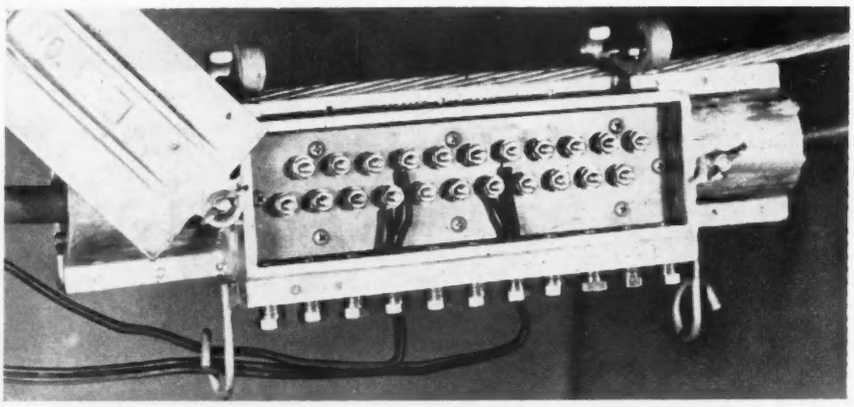


FIGURE 88: — Neale NT30 cable terminal showing connection of drops to terminal posts.

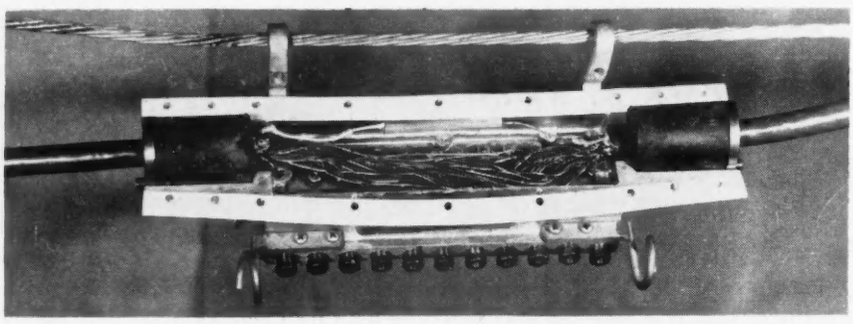


FIGURE 89: — Internal view, front half of Neale terminal showing end sealing plugs in place.

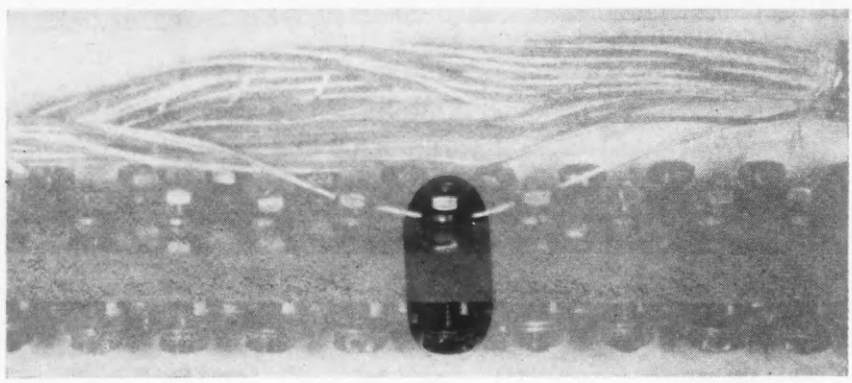


FIGURE 90: — In the Neale NT30 terminal the cable conductors are connected directly to the terminal posts without removing the paper insulation or cutting the wires, as detail indicates.

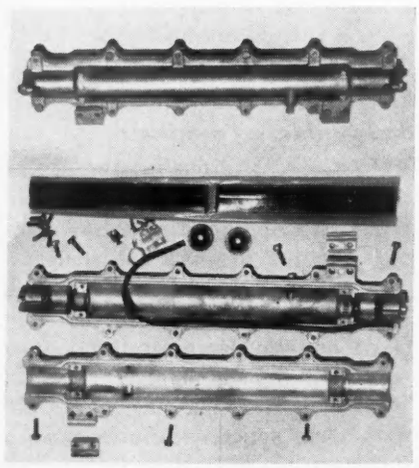


FIGURE 91: — Illustrating component parts of Western Electric 1A splicing case above, and assembled case below. The component parts shown are Butyl rubber cord and winding strips for sealing the case, plastic washers and compression glands, ring clamps for grounding cable shield or sheath to case, split rings for snubbing jacket ends on plastic cable, clamps for attaching case to messenger strand, and various bolts and screws for assembling the clamps and case halves.

terminal can be installed in 15 to 45 minutes, even by an inexperienced worker.

A type of metal splice enclosure that is coming in use in the Bell Telephone System for plastic jacketed or lead covered cable is illustrated in *Figures* 91 and 92. This is a die cast aluminum splicing case composed of two halves that are bolted together over the cable splice after the conductors are joined in the standard manner and covered with muslin tape.

To produce a water-tight seal, a cord of uncured Butyl rubber is laid in grooves around the edges of one case half as shown in *Figure* 91, and

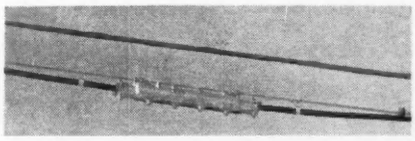


FIGURE 92: — Showing the 1A splicing case in position on 51-pair Alpeth cable.

a strip of the same material is wrapped around each end of the cable sheath. Round plastic washers with concentric grooves are cut out in the center and snugly fitted over the cable sheath on each side of the wound on Butyl rubber strip.

Compression glands are inserted into the "stuffing box" ends of the case after the case halves are bolted together. Tightening the bolts on the case and the glands causes the sealing compound to flow into crevices and tightly seal the splicing case. Unlike ordinary live rubber, the dead soft Butyl rubber will not shrink and thus assures a permanent seal. Ring clamps are used to bond the sheath of lead covered cable or shield in plastic jacketed cable (Alpeth or Stalpeth) to the splice case to maintain ground

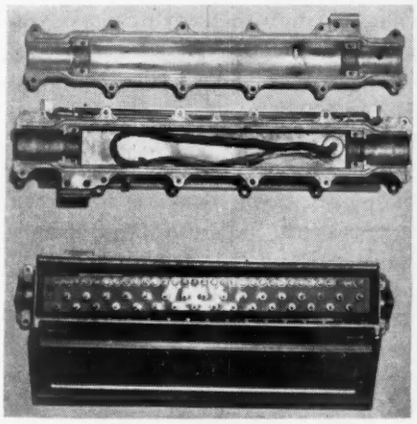


FIGURE 93: — Case halves of Western Electric TA cable terminal above, and front open view of terminal below. Note leads brought through gas-tight bushing for connecting to pairs in through cable.

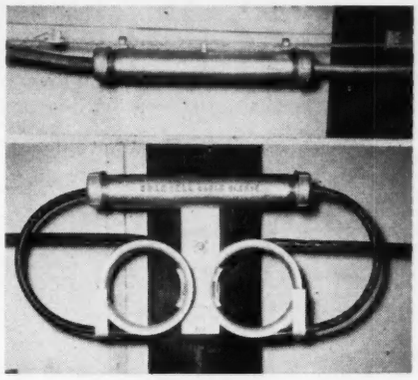


FIGURE 94: — Above — Channell S-1 cable sleeve mounted on messenger strand. Below — Channell B-1 sleeve for terminal bracket mounting on self-supporting cable.

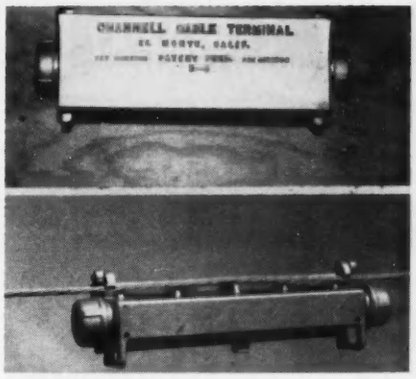


FIGURE 95: — Front and rear views of Channell cable terminal designed for strand mounting.

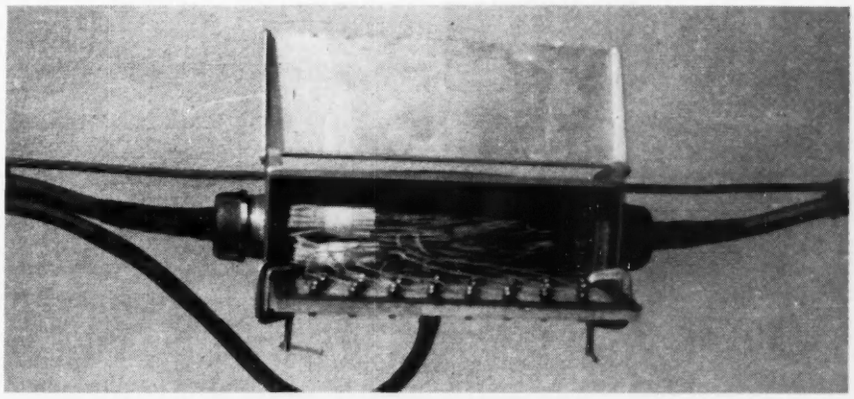


FIGURE 96: — Interior view of Channell cable terminal. Note third cable brought out through bottom for branch cable.

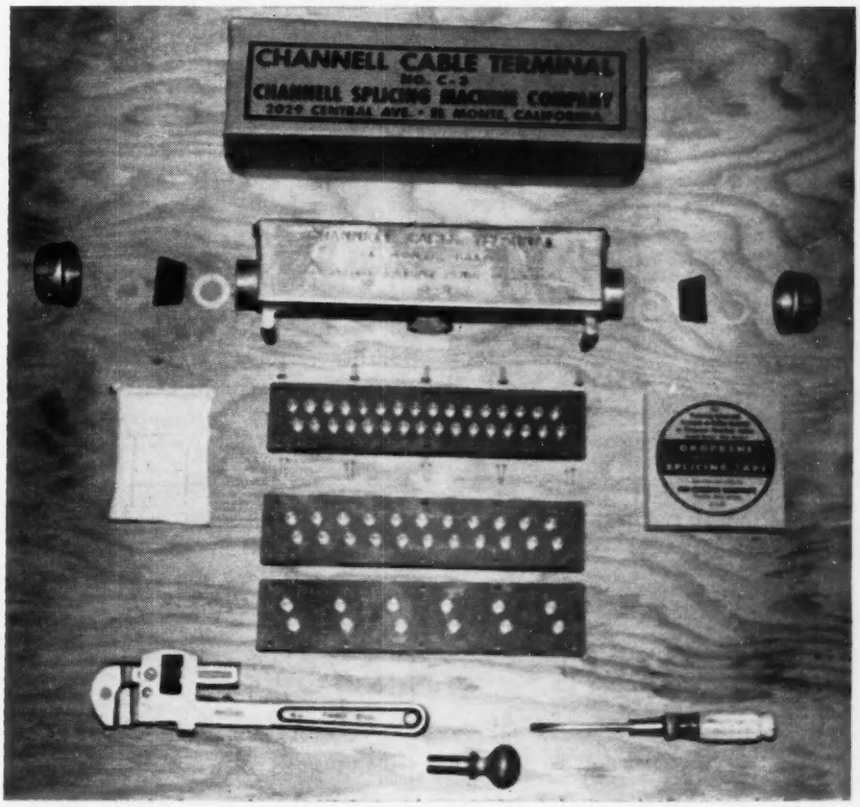


FIGURE 97: — Component parts of Channell cable terminal and tools needed for assembling parts. Note grommets and split washers for sealing ends and face plates with different terminal post groupings to obtain desired terminal feed.

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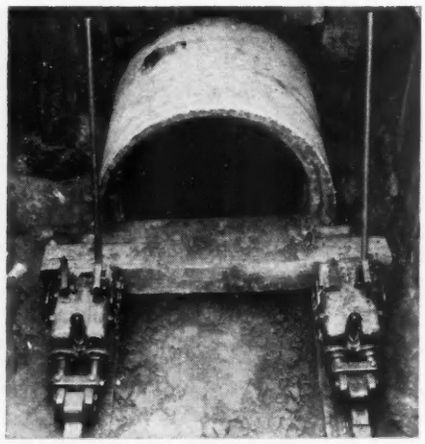

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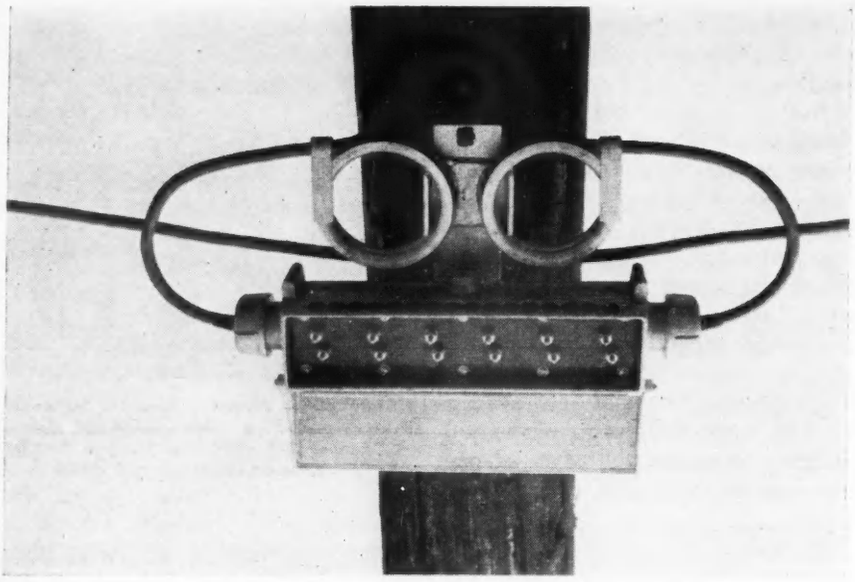

FIGURE 98: — Channell cable terminal for self-supporting cable.

continuity along the metal sheath or lead covering of the cable.

For connecting subscriber's drops, a terminal with back of the same construction is used with one half of a splicing case (*Figure* 93) for attaching directly to the cable and messenger strand. Ten-pair and 16-pair terminals are available and it is possible to assemble two terminals back to back to obtain connections for 26 or 32 cable pairs at one point. This type of terminal makes use of a cast resin block for supporting the terminal posts and protector units (in protected type terminals) and encasing the lead connections. The leads are brought through a gas-tight bushing into the splice chamber where they are spliced to the associated cable pairs in the regular manner.

In *Figure* 94 is pictured a type of metal enclosure consisting of a cast aluminum sleeve with threaded ends for capping after the sleeve is positioned over the splice. Two types are available, one for mounting on messenger strand carrying plastic jacketed or lead covered cable, and the other, for attaching to a terminal bracket of self-supporting plastic jacketed cable.

The procedure for installing the metal sleeve is simple. The required number or sleeves are placed on the messenger strand at points where the splices are to be made, and the cable is pulled through the sleeves. After each splice is completed, the sleeve is slipped in place over the splice, and the caps are removed and pushed back out of the way. A split washer is slipped over the cable and pushed into the end of the sleeve. A neoprene grommet of the proper size (*Figure* 97) is split with snips, placed over the cable and pushed into position against the end of the sleeve. (On straight splices, it is not necessary to split the grommets.) Another split washer is positioned on the cable next to the grommet. The final step is to screw the caps onto the sleeve ends and tighten them in place with a pipe wrench.

The corresponding cable terminal (*Figures* 95 and 96) also has threaded pipe ends for passing the cable through the terminal and accommodating caps to be tightened down over the washers and sealing grommets. Cable pairs in the through cable are pieced out to terminate on the terminal posts as indicated in *Figure* 96. Component parts of the cable terminal and the tools required for assembling the parts are shown in *Figure* 97. For terminating self supporting cables, the terminal installation procedure illustrated in *Figure* 98 is employed.—***To Be Continued.***

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Kansas & Missouri Groups Hold Joint Convention

■ KANSAS CITY, KANS. . . . Nearly 500 Independents attended the fourth annual joint convention of the Kansas & Missouri Telephone Association at the Town House Hotel.

With the exception of a new vice-president for the Kansas association, and a new 4th vice-president for the Missouri association, both groups retained their present officers. Thomas Fegan, Junction City, Kans., was elected vice-president of the Kansas association, succeeding H. H. Welsh, Effingham, Kans. H. V. Agne, Wentzville, Mo., was elected 4th vice-president of the Missouri group, succeeding Mrs. J. T. Willis, Harrisonville, Mo.

Carl L. Spaid, president of the United Telephone Company of Missouri and the United Telephone Co. of Kansas, was re-elected president of the Missouri association.

J. G. Kreamer, Prairie Village, Kans., vice-president in charge of operations for the United Telephone Co. of Kansas, was re-elected president of the Kansas association.

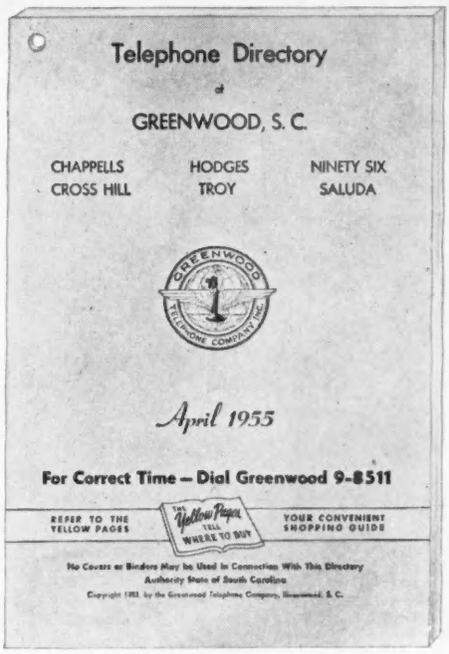
KANSAS ASSOCIATION OFFICERS (l. to r.): — DOUGLAS GLEASON, Secretary; TOM FEGAN, vice president; J. G. KREAMER, president; and CARL ULFFERS, Jr., treasurer.

Also re-elected by the Kansas group were the treasurer, C. A. Ulffers of Topeka, general commercial manager of Southwestern Bell for Kansas, and secretary Gleason.

New directors of the Kansas association are: Harry Miller of Great Bend; Carl Traver of Haddam; Clyde Tucker of Pleasanton, and Robert Warren of Ellinwood.

Other directors are: Howard Ellis

OFFICERS AND DIRECTORS of Missouri Telephone Association: — Front row seated — J. M. ROBERTS, Gallatin, director; J. HARDIN-SMITH, St. Louis, director; HAROLD STOUFFER, Granby, director; Col. C. W. GOTTRY. Columbia, director; FOSTER B. McHENRY, Jefferson City, director; J. R. PETERSON, St. Louis, director. Back row, standing: — F. M. BROWNE, Clarence, director; JOS. L. VAN HORN, Grinnell, Iowa, director; H. SCOTT GAULT, La Plata, director; J. R. CARTER, Salisbury, director; CARL L. SPAID, Kansas City, president; C. W. CHASTAIN, Princeton, director; JACK BARTRUFF, St. James, director; R. W. HEDRICK, Jefferson City, secretary-treasurer; and GEORGE A. HEARNE, Kansas City, ex-officio member of executive committee.



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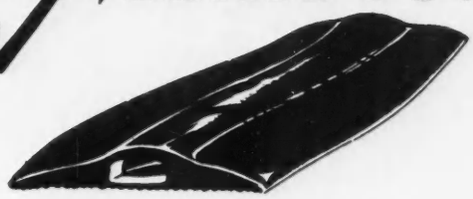

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of Haviland; Ross Gault of Wellsville; George Murphy of Gorham; Douglas Gleason of Topeka; Tom Fegan of Junction City; Tom Laming of Tonganoxie; J. G. Kreamer of Kansas City, Mo., and Carl Ulffers Jr. of Topeka.

The Missouri officers re-elected were R. R. Coffman, first vice-president, manager of the Middle States Telephone Co., Cameron; T. Davis, second vice-president, owner and president of the Sullivan Telephone Co., and R. E. Williams, third vice-president, owner and president of the Oregon Telephone Co.

New directors of the Missouri association are; Jack Bartruff of St. James; C. W. Chastain of Princeton; J. L. Van Horn of Grinnell, Iowa, and J. R. Peterson of St. Louis, Mo.

Other directors are: Scott Gault of La Plata; J. M. Roberts of Gallatin; F. M. Browne of Clarence; J. Hardin Smith of St. Louis; Harold Stouffer of Granby; F. B. McHenry of Jefferson City; C. W. Gottry of Columbia, and J. R. Carter of Salisbury. George A. Hearne of Kansas City, Mo., is an ex officio member.

Speakers at the 2-day convention were: J. G. Kreamer, president of the Kansas association; Carl L. Spaid, president of the Missouri group; Carl Brorein, Sr., president of the Peninsular Telephone Co., Tampa, Fla., and treasurer of the U. S. Independent Telephone Association; Everett Weitzell, chief of REA's Telephone Operations and Loans Division, Washington, D. C.; Ray W. Smith, editor of Telephone Engineer Publications, Chicago; and Dave Livingston, humorist.

Oregon & Washington Groups Hold Joint Convention

■ SEATTLE, WASH. . . . Again, the members of the Oregon and Washington Independent Associations, together with many of their friends from the telephone equipment manufacturing and supplier companies and visitors from the Pacific Telephone & Telegraph Co. of Seattle and Portland, congregated for their joint annual convention. Beginning on June 16 the influx of telephone people was noticeable in the lobby of The Olympic Hotel, and from then on to the exodus on the 18th the telephone folks took over in their usual efficient and gay manner, each doing his part to make the convention the success it proved to be.

OFFICERS OF THE Oregon Independent Telephone Association 1955-56 (l. to r.): — LESLIE A. GRITTEN, secretary-treasurer, Everett, Wash.; JOHN DILLARD, president, Nehalem; LAMBERT MILLER, vice president, Clackamas.

From the registration of the attendents, the meetings and social affairs moved smoothly along and the approximate 500 members and visitors enjoyed themselves, learned much about their business, and were satisfied that this had been the most outstanding convention since the Associations started to hold joint meetings back in June 1940.

L. M. Curry, president of the Washington Independent Telephone Association, presided at the opening session Friday morning; and he introduced the Reverend D. Warren Campbell, pastor of the Seattle First Presbyterian Church, who gave the invocation.

Greetings were extended to the visitors both by Ray Dalton, vice president of the West Coast Telephone Co., Everett, Wash., and by Mayor Allan Pomeroy of Seattle, Wash.

"Let Your Light So Shine" was the title of the first address, presented by Leon F. Roberts, director of information, United States Independent Telephone Association, Washington, D.C.

Arthur W. Lambert, chairman of U.S.I.T.A. Subcommittee on Message Toll Compensation, addressed the group on the subject of "Toll Compensation." Mr. Lambert stressed the need for completion of Toll Compensation studies.

"Let's Talk About People" was the topic chosen by George E. Krieger, vice president of West Coast Telephone Co., Everett, Wash.

Friday afternoon was devoted to a Plant-Traffic Forum conducted by Don Childers, general commercial agent of the Oregon Washington Telephone Co., Sunnyside, Wash., and an Accounting-Commercial Forum lead by E. J. Thierer, controller of the General Telephone Co. of the Northwest, Spokane, Wash.

Roy A. Worley, vice president and chief engineer of the General Telephone Co. of the Northwest and L. Grey Beck, general plant superintendent of the West Coast Telephone Co., assisted Mr. Childers in the Plant-Traffic meeting. The subjects of Customer Toll Dialing, use of rural carriers and 6-pair rural distribution wire were discussed, and mention was made of the delay being experienced in placing into effect changes by the Civilian Defense.

The subject of accelerated depreciation for tax purposes permitted by recent federal tax legislation was discussed at the Accounting-Commercial Forum. In this connection R. M. Simpson, partner of the firm of Arthur Andersen & Co., certified public accountants, gave the benefit of his expert knowledge and opinions. Both meetings were well attended — many subjects were freely discussed and ideas and information exchanged.

The Saturday morning session was presided over by John H. Dillard, president of the Oregon Independent Telephone Association.

The opening address by Robert

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ORIGINATORS OF THE AUTOMATIC DIAL TELEPHONE

Yeoman, commissioner, Washington Public Utilities Commission, Olympia, Washington was on the subject, "Regulation of a Fixed Rate Industry in a Growing Area."

"Why Sell and to Whom?" was the title of the address presented by Paul Wiedemann, general sales manager of the Washington and Idaho Area, The Pacific Telephone & Telegraph Co., Seattle, Wash.

The concluding address of the morning was given by Professor Edwin H. Adams, Associate Professor of Communications, University of Washington, Seattle. Professor Adams spoke on the subject, "What Have You Got to Say?"

At the Banquet, Wade Dean, President of the Oregon Washington Telephone Company, White Salmon, Wash., in celebration of his 50 years completed in the telephone business and because of his resignation from the Board of Trustees of the Washington Independent Telephone Association, was presented with a miniature "ole rockin' chair," with an order on his local furniture company for a rocking chair to fit. This was presented to Mr. Dean in appreciation of his untiring efforts over the years in Association work. Mr. Dean, deeply moved, thanked the members, impressing upon them that he was not retiring to the rocking chair as yet.

The Pioneer luncheon was held at 12:00 on Saturday, President Walter A. Boro of the General Telephone Co. of the Northwest, presiding. After luncheon, Ray Dalton, president of the Independent Telephone Pioneer Association, spoke to the group on telephone pioneering, urging each member to interest others in joining the Northwest Chapter of the Independent Telephone Pioneer Association. A. T. West of the Oregon Washington Telephone Co., Seattle, Wash., offered a few stories of pioneering days in the telephone business. At this time J. W. Baker, secretary-treasurer of the Northwest Chapter, was presented with a golf stool and drive meter in appreciation of the services he has rendered.

After elections were held, officers and directors of the Associations are as follows:

WASHINGTON ASSOCIATION:—President, W. R. Jarmon, General Telephone Co. of the Northwest, Spokane, Wash.; Vice-President, W. F. Barnett, president, Vashon Telephone Corp., Vashon, Wash.; and Secretary-Treasurer, J. W. Baker, Spokane, Wash.

OFFICERS OF The Washington Independent Telephone Association, 1955-56 (l. to r.): — W. R. JARMON, president, Spokane; W. P. BARNETT, vice president, Vashon; A. J. ZIMMERMAN, executive director.

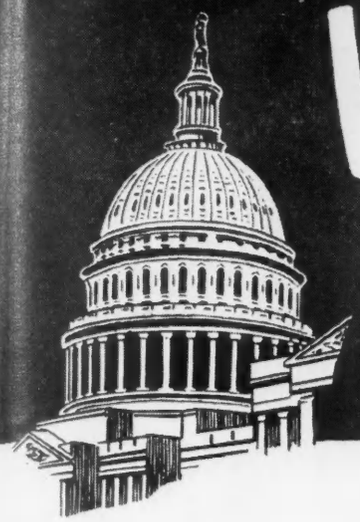
Board of Trustees: W. F. Barnett, Vashon Telephone Corp., Vashon; Lee Bolles, McCleary Telephone Co., McCleary; Don Childers, Oregon Washington Telephone Co., Sunnyside; L. M. Curry, Yelm Telephone Co., Yelm; Ray Dalton, West Coast Telephone Co., Everett; Hugh Finholm, Island Empire Tel. & Tel. Co., Gig Harbor; B. L. Gaines, Cascade Telephone Co., North Bend; A. L. Gately, Orting Telephone Co., Orting; Maurice Hull, Peninsula Tel. & Tel. Co., Forks; W. R. Jarmon, General Telephone Co. of the Northwest, Spokane; W. C. Mumaw, Cohassett Beach Telephone Co., Aberdeen; Wm. G. Pottratz, Cowiche Telephone Co., Cowiche; J. R. Reybolds, Natchez Telephone Co., Naches; R. E. Rudolph, Ellensburg Telephone Co., Ellensburg; and, G. J. Stover, Skagit Valley Telephone Co., Mount Vernon.

OREGON ASSOCIATION: — President John H. Dillard, Nehalem Tel. & Tel. Company, Nehalem, Ore.; Vice-President, Lambert Miller, Sunnyside Telephone Co., Clackamas, Ore.; and, Secretary-Treasurer, Leslie A. Gritten, West Coast Telephone Co., Everett, Wash.

Board of Directors: M. F. Berglund, Tri-County Telephone Co., Wacoma Beach; Lowell Brown, Interurban Telephone Co., Silverton; John Cavanaugh, West Coast Telephone Co., La Grande; Raymond M. Crockett, Northwest Telephone Co., Redmond; Lyle Cross, West Coast Telephone Co., Beaverton; Rodney Cummings, Pioneer Telephone Cooperative, Inc., Philomath; Floyd Day, Estacada Tel. & Tel. Co., Estacada; Earl Dean, Oregon Washington Telephone Co., Hood River; Don F. Gibbs, Redwoods Telephone Co., Cave Junction; D. O. Hood, Columbia Utilities Co., Medford; E. R. Hood, Columbia Utilities Co., Portland; Leon L. Roome, Halsey Telephone Co., Halsey; L. E. Scott, Linn County Telephone Co., Lebanon; and, H. O. Wiswell, Haines Telephone Co., Haines.

NORTHWEST CHAPTER OF THE INDEPENDENT TELEPHONE PIONEER ASSOCIATION: — President, Harley Barber, West Coast Telephone Co., Beaverton, Ore.; Vice-President, B. B. Schlaefer, Spokane, Wash.; and, Secretary-Treasurer, J. W. Baker, Spokane, Wash.

Executive Committee: Walter A. Boro, General Telephone Co. of the Northwest, Spokane, Wash.; John Cavanaugh, West Coast Telephone Company, La Grande, Oregon; Murray Dodson, Oregon Washington Telephone Company, Burns, Oregon; C. E. Hoy, General Telephone Co. of the Northwest, Spokane, Wash.; W. G. Pottratz, Cowiche Telephone Company, Cowiche, Wash.; and, T. J. Wells, Northwest Telephone Company, Redmond, Oregon.



Washington BUREAU REPORTS

By The Editors of "Telecommunications Reports"

A PROPOSAL which could lead to municipal ownership and operation of the telephone system in Richland, Wash., a community built around an atomic energy processing plant on behalf of the Atomic Energy Commission, whipped through Congress in the closing days of this year's session after heated debate in the Senate which centered on the telephone problem.

The overall bill provides for establishment of local self-government, and disposal of government-owned homes, utilities, and other facilities, in Richland and in Oak Ridge, Tenn. The telephone problem at Richland was described by the Joint Committee on Atomic Energy, which handled the measure, as a "particularly knotty" one. At Oak Ridge, the telephone system is operated by the Southern Bell Telephone & Telegraph Co., and there is no problem there.

Under the bill, as passed by Congress, the Atomic Energy Commission "may give" any utility facilities involved to a municipality, but must sell them to any other purchaser.

In its report, the joint committee said that "The telephone system in Richland has been a particularly knotty problem since the city desires to have the phone system for itself in order to provide revenues to help operate the city. The attorney general for the state of Washington has ruled that the city of Richland will not have the legal authority to receive the telephone system under present statutes.

"The telephone company which had the franchise in the area (General Telephone Co. of the Northwest) before it was partially condemned at the time of the acquisition of the real estate for the Manhattan Engineering District desires to reestablish itself in accordance with the rights given to it in its franchise."

Speaking generally, the committee said that the reason AEC is authorized to give any utility to a city "is that it may be in the best interests of the United States, if all other factors are equal, to give the utility to the city and permit the city to use the operating revenues as increased sources of revenues for the city."

The bill calls for transfers of utilities "as in the judgment of the Commission will be appropriate to enable the transferee to meet the needs of the residents of the community" within five years after adoption of the act. Transfer may be made to any political subdivision or to any person, corporation, or other legal entity.

The commission may consider, in transferring utilities, the pattern of ownership of comparable utilities in the state; ability of the transferee to operate the utility; and probable price. It is authorized to sell utility facilities, if it decides to sell them, by advertising and competitive bid or by negotiated sale.

As the AEC prime contractor in Richland, the General Electric Co. now operates the telephone system and other facilities in the community.

Senate debate on the bill, which was defended principally by Chairman Clinton Anderson (D., N. Mex.) of the Joint Committee on Atomic Energy and Senator Henry Jackson (D., Wash.), and questioned mainly by Senators William F. Knowland (R., Calif.) and Homer Capehart (R., Ind.), was concentrated on the question of why the communities should be given utilities when outside purchasers would have to buy them. Proponents of the measure argued successfully that since there is no business property to be taxed, and residential taxes cannot carry the load, it might become necessary for the community to have revenue from municipally-operated utilities to support local services.

When questions about the Richland telephone system were raised, Senators Anderson and Jackson said that under present Washington state laws, the community of Richland could not operate a telephone system. When Senator Knowland inquired what would happen if the Washington law were changed, Senator Jackson said it would be interference with states' rights for the federal legislators to take a hand in such a situation.

Senator Knowland, before the bill was passed by a voice vote, declared that "This may be the first time in the history of the federal government that we have written into a law passed by the Congress language encouraging general public ownership on the part of municipal governments at the expense of the federal government."

The Senate minority leader also put into the records a letter from US Independent Telephone Association Executive Vice President Clyde S. Bailey declaring that the bill proposes, "for the first time, to our knowledge," municipal ownership "in a field heretofore occupied throughout the nation by private enterprise."

The letter went on, "Municipal ownership of the telephone properties at Richland would be wholly inconsistent with the local, state, and national pattern of ownership and operation of such facilities. In all other atomic energy locations, telephone service is provided by commercial companies. Unlike electric distribution and transportation systems, telephone communications have consistently been provided the American

(Continued On Next Page)

Thompson Field Research, the most extensive in the industry, now tells you the best way to destroy all mixed brush and hardwood growth during the dormant season . . . effectively . . . economically.

Thompson's proven spray techniques and its Broad Spectrum Bramblcide deliver almost complete kills at unequalled low cost.

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Many of the world's largest users of herbicides specify Thompson, one of America's few basic manufacturers of selective herbicides. Inquire.

Write for Research Station Papers No. 19 and 21, mentioning type of brush to be controlled and number of miles of right-of-way involved. Favorable utility chemical prices submitted on request.

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FIRST NAME IN BRUSH KILLERS

session of Congress being called by President Eisenhower this fall to take up highway legislation again, but this was doubted in many quarters for two reasons — extreme disinterest on the part of most Congressmen in returning to Washington before next year, and the way in which the highway bill burst like a balloon several weeks ago under the pressure of bus. truck, gasoline, railroad, tire, and numerous other lobbyists.

During House discussion of the reimbursement section, the messages of state highway officials put into the record generally were to the effect that utilities receive benefits from the use of public rights-of-way, and that they agree to bear relocation costs when they locate facilities on the rights-of-way in the first place. They also concentrated much of their discussion on states' rights, taking the position that if the states do not wish to reimburse utilities the federal government should not pass a law requiring them to do so.

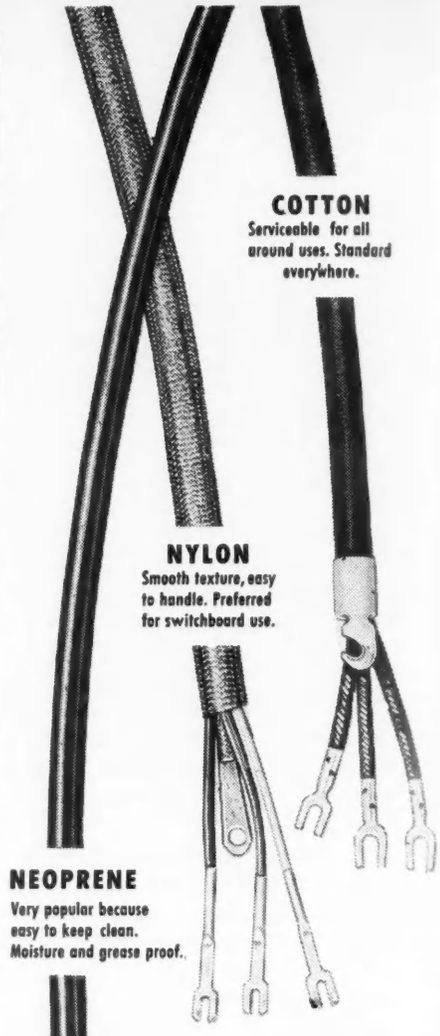
Supporters of the committee's provision argued in vain that under the House bill the states would not have to accept the funds to reimburse the utilities unless they wished to. While the state highway commissioners are against reimbursement, it was added, there is no record that any state public utilities commission is against the provision.

Observers of the situation drew one main conclusion — by far too little has been done by operators of small utilities to make their legislators aware of the deadly effect which a highway project could have on them.

Chance Co. Advances J. S. Curtright

J. T. ISBELL, A. B. Chance Co. vice-president in charge of sales, has announced the appointment of J. S. Curtright as sales manager of electrical wholesaler products. Curtright will be responsible for the sale and distribution of products which the company distributes through electrical wholesalers. He will direct the Centralia sales service office and the field sales force which sells these products, consisting of anchors, guying equipment, protective devices, conductor specialties and construction and maintenance tools.

Curtright has been with the company for 16 years, most recently as a manager of sales. From 1938 to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Serviceable for all around uses. Standard everywhere.
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Smooth texture, easy to handle. Preferred for switchboard use.
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The new standard original equipment cord of the Independent Telephone Industry.

The sturdy, long-lasting telephone cord that resists abrasion, perspiration, humidity, oil and grease. Specify TELECORD when you purchase telephones. On replacements use TELECORD for economy and service.

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The PREFERRED Cable of the Independent Telephone Industry

DEMAND is one measure of leadership. The preference of hundreds of independent telephone companies for TELECABLE has established the leadership of this great, new exchange area cable.

TELECABLE Exchange Area Cable for aerial and duct use has polyethylene insulation and polyethylene sheath . . . the thermoplastic sheath that provides the long life required of telephone cable. TELECABLE possesses excellent transmission qualities and extraordinary weathering properties, withstanding sunlight and extremes of atmospheric temperature. It is not subject to environmental cracking, it is light in weight, tough yet flexible.

TELECABLE Exchange Area Cable is REA approved under Specification PE-14.

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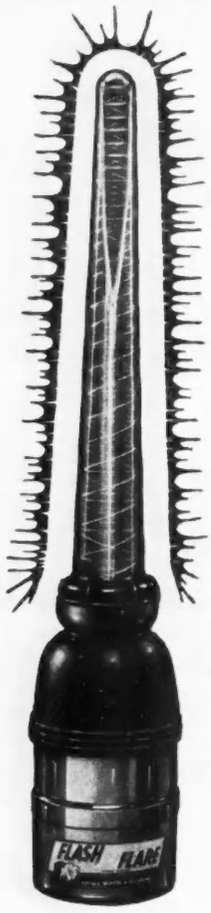

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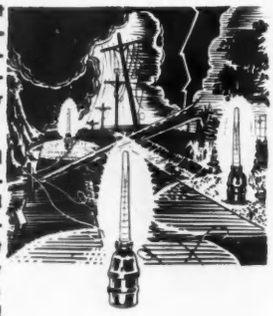
Every truck using the highway should have a set of Flash Flares. Just a twist of the cone and Flare flashes positive day and night warning. Battery has one year storage life, has given up to 70 hours of intermittent service under test. Replacement batteries easily available. This heavy, weatherproof flare will not tip over in 35 mph wind.



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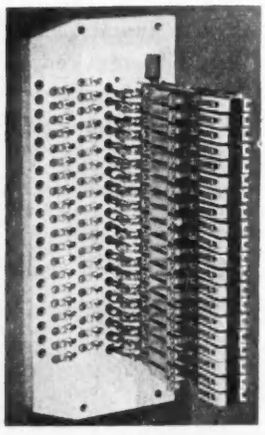

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MDF-W. E. 1420B Mounts 10 above groups $10.00

1435W (Western Electric) #1269A, 20 pair, complete with 76A heat coils, #26 & #27 discharge blocks, wired to terminal base
Brand new factory carton $19.50

#1269A 20 pr. group, equipped as above. New $17.50
Reconditioned like new 10.00
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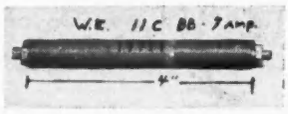
#1269A 40 pr. group, equipped new $30.00

Many others



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New (sealed cans of 20) per fuse 7c
Hundred lots ..... 6.00; thousand 50.00

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people under conditions of private ownership and operation."

Mr. Bailey added. "During World War II, the Richland communications facilities were provided and operated by the federal government with the specific understanding, documented in the files of the Washington Public Service Commission, that at the end of the emergency the operation would revert to the commercial telephone company which has serving rights in the territory. This understanding has not been carried out notwithstanding the entire willingness of the telephone company to proceed. The company is ready and able to take over the federally owned property at its fair and reasonable value and operate the telephone system in the public interest under jurisdiction of the state regulatory body."

Despite the heated debate in the Senate, the bill was passed quickly by the House.

Highway Relocation

IN ANOTHER area of legislative activity, proponents of reimbursement to public utilities of their highway relocation expenses will have a long way to go to put across their arguments the next time Congress considers federal highway legislation, but clearly some headway has been made in the fight to date, it appeared to observers as the Congressional session came to a close.

Reimbursement made half the trip through Congress, winning Senate approval, but the scope of the opposition still remaining was made clear when the House, before it killed the entire highway bill, knocked out by a 125-75 vote a section approved by its Public Works Committee which would have made partial provision for reimbursement.

Opposition to reimbursement was led in the House by Reps. Brady Gentry (D., Tex.) and Robert Jones (D., Ala.), with Rep. Gentry deserving most of the credit for killing the provision long sought by large and small utilities. The opposition, as expressed on the floor, rested almost entirely on the unanimous opposition of state highway officials to the reimbursement provision — which was hardly unexpected. Rep. Gentry, a former state highway commissioner, obtained expressions backing his stand from all 48 states.

There was some talk of a special

1951 he was district sales manager in Los Angeles. Prior to his coming with A. B. Chance Co. he was district manager for the Pontiac Division of General Motors Sales Corp.

L. C. Hansen, A. B. Chance Co. sales manager for the past five years, will continue as general sales manager in charge of all product lines.

Ralph A. Feasel Observes 45th Service Anniversary

RALPH A. FEASEL, office manager of Kellogg Switchboard & Supply Company's Kansas City branch office and warehouse, celebrated his 45th anniversary with Kellogg in June.

President James H. Kellogg, and other company officers and sales executives, paid tribute to Mr. Feasel at a dinner held in the Captain's Cabin of the Illinois Athletic Club, Chicago, on June 10. Mr. Kellogg, Vice-Presidents C. D. Manning and W. A. McCracken, and Sales Manager W. P. Hollis, commended Mr. Feasel on the exceptional job he has done both for Kellogg and the Independent telephone industry during the past 45 years. A 45-year pin and an engraved gold pocket watch were given by Mr. Kellogg on behalf of the company.

Mr. Feasel began his telephone career when just a lad by operating a switchboard for the Neosha Telephone Co., Neosha Falls, Kans., which was owned by his father. In 1910, at the age of 16, he joined Kellogg as a "jack of all trades" in the shipping department. A few years later he was promoted to chief clerk, and for well over a quarter of a century he has done on outstanding job as manager of the Kansas City office.

45th SERVICE ANNIVERSARY: R. A. FEASEL, office manager of the Kellogg Switchboard & Supply Company's Kansas City office tries for size the handsome engraved watch given by Kellogg's President J. H. KELLOGG (right) on behalf of the company.

Stromberg-Carlson Advances Arthur L. Foster

ARTHUR L. FOSTER has been appointed sales promotion manager of the Stromberg-Carlson sound equipment division, according to an announcement made by A. G. Schifino, vice president in charge of this division. Mr. Foster will also be responsible for advertising of sound equipment products.

Mr. Foster was born in Rochester, attended grade and high schools in Palmyra, N. Y., and graduated from

BUCKEYE TELEPHONE & SUPPLY CO. recently served as host to almost 50 Independent telephone company men from Ohio and neighboring states. The gathering was planned in conjunction with Ansonia Wire & Cable Companys' demonstration on splicing, hanging and general use of plastic cable. KEN GILLETTE of Ansonia showed the different methods of splicing cable and the guests served as participants in the actual splicing techniques. R. A. CLARK of Communication Equipment & Engineering Co. gave a talk on the loading of cables and MAX LEKSON of Preformed Line Products, consulted with the group on the use of cable hangers, guards and guying material. E. F. KEEFE demonstrated Minnesota Minings' new "Scotchcast Splices."

construction and maintenance DIGEST

- 25-year battery
- Swing and save
- Supersonic splice
- Lightweight champ
- Terminal saves money

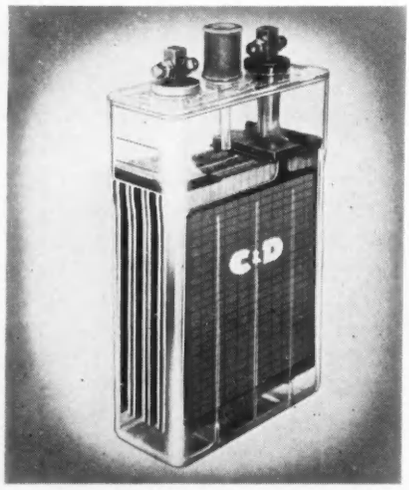
Published every month to help you get the most out of your materials and supplies dollar

by C. J. Reynolds, Stromberg-Carlson Company

The few dollars you spend on *reliable* equipment today will be repaid a hundredfold in lower maintenance costs for years to come. Protect your investment with the double guarantee offered by Stromberg-Carlson. First, leading manufacturers build this equipment, and guarantee it. Second, because we recommend and sell this equipment to the telephone industry, we *also* guarantee its performance!

Battery will live 25 years

A quarter of a century is the expectancy of an extra-life battery made by C & D Batteries, Inc. In full-float service, their PlastiCal (lead calcium grids) battery will serve your power needs faithfully —often well beyond its 25-year expectancy.



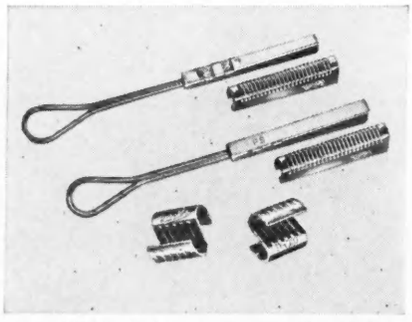
It'll be 1979 before you even have to *think* about replacing this extra-life C & D battery, if you install it now!

C & D Batteries' PlastiCell (high tensile, special alloy grids) battery offers reliable power supply at lower cost, with a life expectancy of 14 years.

You can get both of these C & D extra-life batteries from Stromberg-Carlson.

Let drop wires swing free at support—they'll last longer

You prolong the life of drop wires when you use clamps that let the wire swing free at the support.



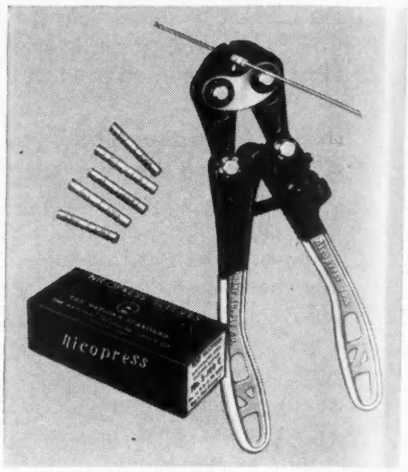
Type "PS" gives extra support for smaller wires. "D" clip is for snub attachments.

Such clamps are the Reliable Drop Wire Clamps offered by Stromberg-Carlson. These clamps give excellent support, eliminate sharp bends, and let you string and sag service drops before cutting wire.

Under load, they automatically tighten, assuring you a firm grip without damaging insulation.

High-speed splice outlasts the wire itself

You can cut half the time off splicing wires—and get a splice that will actually outlast the conductor itself!



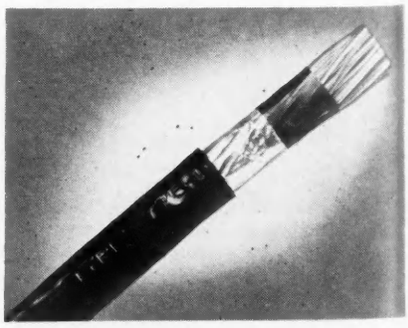
Available for all types of wire: Nicopress sleeves. Special Nicopress tool is easy to use.

Because it is stronger than the rated breaking strength of the wire, you just can't pull apart a joint made with the Nicopress sleeve. It will withstand the toughest strains of vibration, yet makes a neat, compact splice that you can use on drop or inside wires as well as other lines. A tough inner alloy lining—harder than either the sleeve or the conductor – is the secret of Nicopress sleeves' strong grip.

To apply Nicopress sleeves quickly and simply, use the Nicopress tool, which is specifically designed to work together with the sleeves for high-speed splicing.

Here's easy-handling cable— Aerial, burial or tucked in a duct

You can cut installation and handling costs, save yourself a lot of time, with Ankoseal lightweight plastic cable.



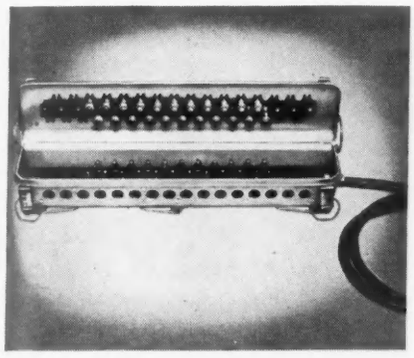
Polyethylene insulation and special jacket compound of this cable give plenty of protection.

It has polyethylene insulation that gives you excellent moisture resistance and thereby eliminates the hazard of wet cable. Another advantage of polyethylene is its high dielectric strength, which means less lightning trouble.

And to give you an unbeatable protection from weather, the Ankoseal 454 jacket compound is used. This special formula not only shrugs off climatic conditions, but also resists corrosion, electrolysis and vibration cracking.

Designed for economy

That's the way to describe the New "Stranterm" cable terminal, the most flexible terminal ever developed. The Stranterm is primarily strand-mounted, but may be pole-mounted. The stub may be taken out of either end of the terminal



Strand-mounted cable terminal.

and can be either lead or plastic cable. The core section is gas-tight and moistureproof; the terminal may be protected, **even after installation,** either fully or on a pair-by-pair basis by the addition of Cook's "snap-in" Mini-Gap arresters. The 11 and 16 pair core assemblies are interchangeable and replaceable; and drop wire openings are completely sealed by an exclusive grommeting arrangement. Manufactured by Cook Electric Company in 11, 16 and 26 pair sizes, with 3½ foot cable stubs.

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Stromberg-Carlson®

ROCHESTER 3, NEW YORK

A Division of General Dynamics Corporation

Sales Offices: Atlanta 3, Chicago 6, Kansas City 8, Rochester 3, San Francisco 3.

the Rochester Business Institute in 1950, where he majored in sales and advertising. He joined Stromberg-Carlson in 1954 as a member of the sound equipment division's advertising department, following experience with Yawman & Erbe Manufacturing Co., and the Provident Mutual Life Insurance Co., and two years' service in the U. S. Navy, including overseas duty in the Mediterranean area.

Stromberg-Carlson Adds New Telephone Salesmen

EDGAR RAY SEARS, JR. has been appointed telephone salesman in the Stromberg-Carlson Co.'s San Francisco office, according to T. C. Thompson, general telephone sales manager. Other changes include the shift of Fred E. McGrady from sales representative to sales engineering, and the return of C. Lowell Harmon from San Francisco to the Rochester, N. Y., national sales engineering office.

Mr. Thompson stated that with the addition of Mr. Sears, Jr., the California sales staff now includes Kenneth J. Johnson, Ernest D. Larson, and Charles E. Fogg. The sales engineering staff includes, in addition to Mr. McGrady, Morris L. Hansen, and Kenneth J. Terry. The California manager of the telephone sales branch is Joseph P. Galligan.

Edgar Rays Sears, Jr. began his association with the telephone business in 1941. After a 3-year hitch with the Signal Corps, he returned to the telephone business, and for the last five years has been a sales representative in the Ohio area. Other experience includes retailing in San Francisco, California.

Mr. McGrady has been serving as telephone sales representative in the northwest territory and southern California, Nevada, Utah, and Arizona. He has spent all his life in telephony and his three years' military service were with the signal Corps in Alaska as technical sergeant in charge of telephone engineering and installation.

Mr. Johnson joined Stromberg-Carlson in 1946 and after initial training at Rochester was assigned to the Kansas City sales branch. He has recently been transferred to the San Francisco branch and will represent the company in nothern California, Nevada, and Utah. Mr. and Mrs. Johnson and their six-year-old daughter reside in San Mateo, California.

EDGAR SEARS

F. E. McGRADY

C. L. HARMON

KENNETH TERRY

Mr. Larson has had previous sales experience in Oregon and southern Idaho and prior to that, wide experience in installing dial equipment for both Western Electric and Stromberg-Carlson. He also had Signal Corps experience. He lives in Portland, Ore.

Mr. Fogg has recovered from an unfortunate accident which meant leaving the Indiana-Kentucky-Tennessee territory and in his new assignment in the northwest finds the exhilarating climate a real challenge. Formerly a wire chief on Guam during the last war, he joined up with Stromberg-Carlson in the installation department and handled a number of large XY dial installations. Mr. Fogg,

THE BOARD OF Directors of National Pneumatic Co., Inc. and Holtzer-Cabot Divisions have announced the following appointments: JOHN R. NEWKIRK as vice chairman of the board of directors; RICHARD H. FROST (top left), president; HARVEY J. FINISON (top right), executive vice president; J. J. ANDERSON (bottom left), vice president & general sales manager; ROBERT FROST (bottom right), vice president for marketing. Charles Frost continues as chairman of the board.

4-wheel drive does another job better!

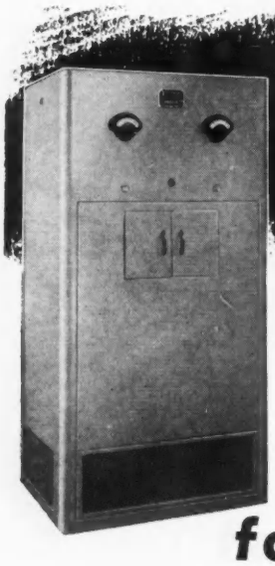
MOBILE POWER

Double-barreled power — that's the Universal 'Jeep'. It has the tractive power to reach the jobs, then furnishes power from its own 'Jeep' engine to operate auxiliary equipment, such as this welder mounted in the 'Jeep'. Power take-off also supplies power for compressors, generators, hoists and other equipment. Ask your nearest Willys dealer to demonstrate this "go-anywhere" many-purpose vehicle, or write for information.

4-WHEEL DRIVE UNIVERSAL **'Jeep'®**

WILLYS...world's largest maker of 4-wheel drive vehicles

WILLYS MOTORS, INC., TOLEDO 1, OHIO



ADD A **FLOTROL**

TO YOUR

ROTARY EQUIPMENT

for: • *Better Voltage Regulation* • *Sizeable Power Bill Savings*

A telephone exchange now using DC generators for charging the batteries can add one or more FLOTROLS and immediately obtain the precise voltage regulation characteristics of the FLOTROL for the entire exchange. The high efficiency of the FLOTROL will greatly reduce power consumption during those hours of the day when the FLOTROL alone is sufficient to carry the entire load; generators can be shut off during light load periods, thereby reducing the wear on the rotating equipment. By installation of FLOTROL capacity sufficient to carry the entire normal load, rotating equipment showing signs of wear can be saved for standby service, continuing its life indefinitely. The advantages obtainable from this type of installation are tremendous. For further information, send for Bulletin 161.

FLOTROL — PARTNERS IN DEPENDABILITY — SUB-CYCLE

LORAIN PRODUCTS CORPORATION

1122 F ST. • LORAIN, OHIO

representing the company in the northwest, resides in Seattle, Wash.

The sales engineering picture is completed with Morrie Hansen, who started with the company in 1946, and Kenneth Terry, who joined Stromberg-Carlson in 1949. Mr. Hansen's previous experience included work with western public utilities before entering the telephone field as sales representative and engineer. He resides in Burlingame, Calif.

Mr. Terry came up through the ranks of inspection, installation, and technical writing. Army experience includes two years of overseas duty. Mr. and Mrs. Terry and their two daughters will take up residence in California.

P. C. DeMuth Joins Lenkurt Electric Co.

P. C. DeMuth, who has more than 40 years experience in telephone transmission engineering, has been appointed editor of the Lenkurt Demodulator, monthly engineering magazine published by Lenkurt Electric Co., San Carlos, Calif. In addition to handling the editorship of the Demodulator, he will act as a consultant to the applications engineering division at Lenkurt.

P. C. DEMUTH

In his many years of work in transmission engineering, Mr. DeMuth has become well acquainted with telephone plant in the United States. He has had wide experience in the application of carrier to open-wire circuits.

Mr. DeMuth began his telephone career in 1913 with the Southwestern Bell Telephone Co. at Houston, Tex. He was assistant transmission and protection engineer for Southwestern Bell at Dallas when he transferred in 1920 to the engineering department of the American Telephone & Telegraph Co. in New York.

He worked first on inductive interference and coordination matters for A.T.&T., then concentrated on crosstalk and transposition design, particularly for carrier frequency operation.

From 1932 until his retirement from A.T.&T. in 1954, he worked on general phases of open-wire and open-wire carrier transmission engineering. During this period he had close

association with development and application of the H, C5, O, and ON carrier systems.

Mr. DeMuth is a life member of the Telephone Pioneers of America.

As editor of the Lenkurt DEMODULATOR he succeeds A. M. Seymour, who is the newly appointed manager of the Technical News Department at Lenkurt.

Hughes To Be In Charge Of Reilly Dallas Office

J. H. BARNETT, JR., general sales manager of Reilly Tar & Chemical Corp., recently announced that Henry D. Hughes has been placed in charge of the Reilly sales office in Dallas, Texas.

A native of Dallas, Mr. Hughes was educated at local schools, Texas A & M, and Southern Methodist University where he graduated from the School of Business Administration and attended the School of Law. Prior to the completion of his education, Mr. Hughes served, during World War II, with the U. S. Marine Corps in the South Pacific and was enrolled in Officer's Candidate School at the time of his discharge.

H. D. HUGHES

Henry Hughes has been engaged in the water and sewage construction business and has been associated with the Farquar Company. Prior to joining Reilly, he was managing his own oil and gas producing and operating organization.

Mr. Hughes will have his headquarters in the new Reilly offices at 520 Park Ave., Dallas 1, Texas.

General Cable Corp. Expands, Into Canada

I. T. BENNETT, chairman of the board, and J. R. MacDonald, president of General Cable Corp., have announced the completion of arrangements with Canada Wire & Cable Company Ltd. for the formation of a new company to manufacture a complete line of telephone wires and cables in Canada. The new company, Telecables & Wires Ltd., will be owned jointly by General Cable, Canada Wire & Cable and the British firm of Telegraph Construction & Maintenance Company Ltd.

General Cable will have a substan-

4-wheel drive does another job better!

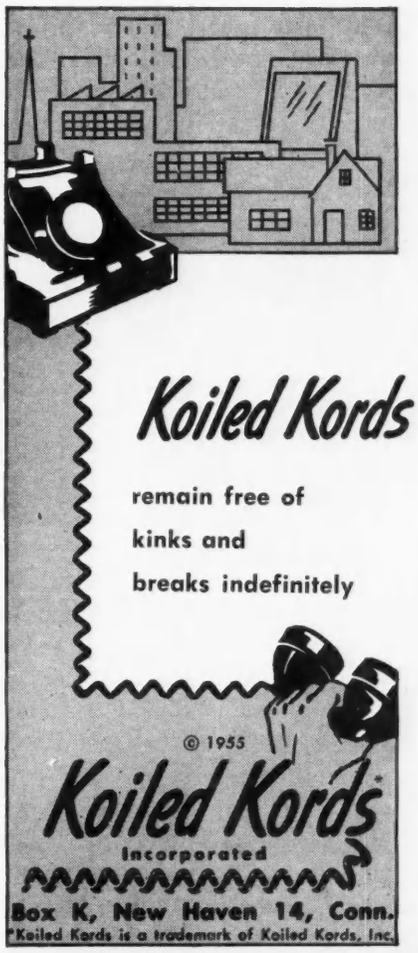
SERVICE VEHICLE

This 4-wheel drive 'Jeep' Truck offers compact design, large, usable carrying space with easy accessibility to tools, parts and supplies. Most important, the extra traction of its 4-wheel drive takes this "go-anywhere" truck right to the job... on the road or off the road. See your Willys dealer for the truck that saves time in all phases of utility service work, or write for information.

4-WHEEL DRIVE 'Jeep' TRUCK

WILLYS... world's largest makers of 4-wheel drive vehicles

WILLYS MOTORS, INC., TOLEDO 1, OHIO



From a Winch Line Hook to a Line Construction Body Be Sure To Check With Us On Your Construction & Maintenance Equipment Requirements...

Line construction and Maintenance Bodies * General Service Bodies * Cable Splicer Bodies * Installer's Bodies * Platform Bodies * Pick-up Bodies * Pick-up Compartments * Pole Derricks and Accessories * Winches and power Take-offs and Accessories * Pole Trailers * Cable Reel Trailers * Combination Pole and Cable Reel Trailers * Cable Splicer Trailers * Aerial Ladders * Aerial Platforms * Sand Barrels * Draw Bars * Pole Binders * Payout and Take-up Reels * Collapsible power Reels * Towing and Pintle Hooks * Connecting Pins * Winch Line Cable

UTILITY TOOL & BODY CO., INC.

Marion, Wisconsin

Builders of Dependable Equipment Since 1935

construction and maintenance DIGEST

- Nix on cross-ring
- In the (sq.) groove
- Anti-aging cable
- Power plus for PBX
- Pennies for power

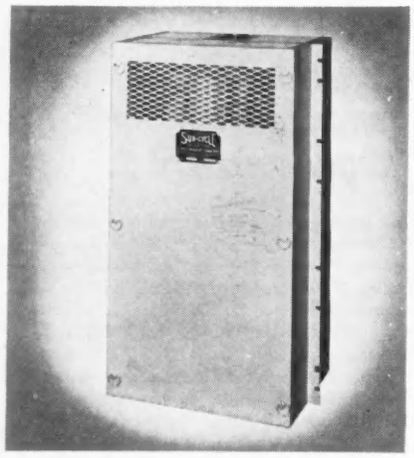
Published every month to help you get the most out of your materials and supplies dollar

by C. J. Reynolds, Stromberg-Carlson Company

The few dollars you spend on *reliable* equipment today will be repaid a hundredfold in lower maintenance costs for years to come. Protect your investment with the double guarantee offered by Stromberg-Carlson. First, leading manufacturers build this equipment, and guarantee it. Second, because we recommend and sell this equipment to the telephone industry, we *also* guarantee its performance!

How to prevent cross-ring in decimonic systems

One good way to avoid cross-ring is to lock your ringing frequencies securely to the 60-cycle supply frequency. This eliminates frequency drift.

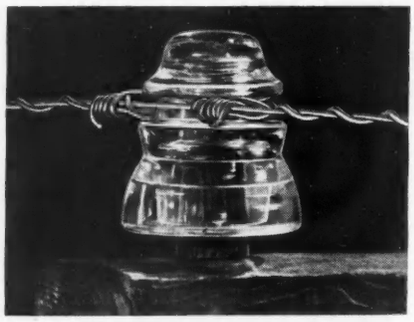


K-5 Sub-Cycle is available for 19" rack, as shown, or in other dimensions to fit 23" rack.

You can do this with the Lorain K-5 Sub-Cycle converter for decimonic ringing systems. This machine provides frequencies of 20, 30, 40, 50 and 60 cycles. These frequencies are rigidly locked into a fixed ratio with your 60-cycle input.

Use this insulator for rugged line construction

Hemingray Number 45 insulators with their square groove provide the ideal slot for your wire. Their reinforced construction under the groove reduces the possibility of breakage of the flange under the most severe ice loading conditions.



Double petticoat, square groove No. 45 insulator.

The extra long leakage path and double petticoat will reduce line losses and insure the strongest signal possible. These insulators are highly recommended for use on dial circuits where the strongest possible signal is necessary.

Another important advantage is the weather resistance of Hemingray insulators. Sudden or seasonal changes won't hurt them. The clear, flawless glass won't age or deteriorate.

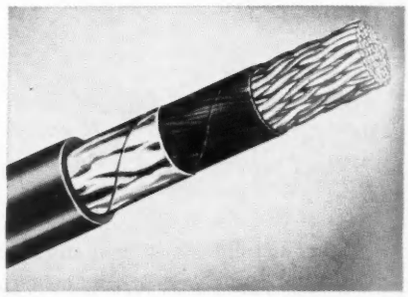
Cable has polyethylene sheath for extra-long life

In outside cable installations, you can side-step the ravages of weather, sunlight and temperature, saving yourself many dollars and hours in maintenance.

To do this, use the protection of the polyethylene sheath on Telecable®. Telecable exchange area cable for aerial and duct use has polyethylene insulation **and** polyethylene sheath. No other thermoplastic material has given as good assurance of aerial cable sheath life expectancy as has polyethylene.

Specially treated to resist sunlight, the Telecable sheath has maximum chemical resistance, is not subject to environmental cracking.

Extremely light in weight, tough, yet flexible, it resists the stresses encountered during installation. You can expect top performance of Telecable for upwards of 20 or 25 years.

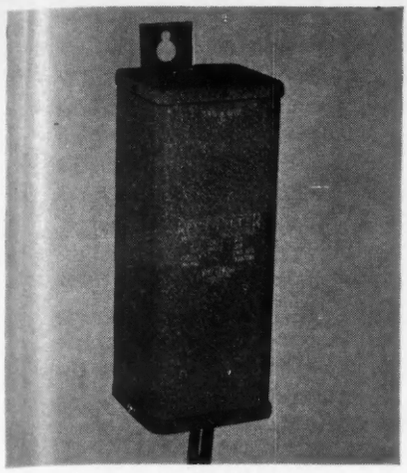


Telecable exchange area cable has outstanding weather resistance and transmission qualities.

Keep your PBX customers happy with this dependable power unit

With no moving parts, the Raytheon RectiFilteR requires neither adjustment nor maintenance. It will outlast many sets of batteries, release wires carrying charging current from central office to subscribers' PBX boards for revenue producing service, and minimize power cost because of high efficiency in converting from AC to DC.

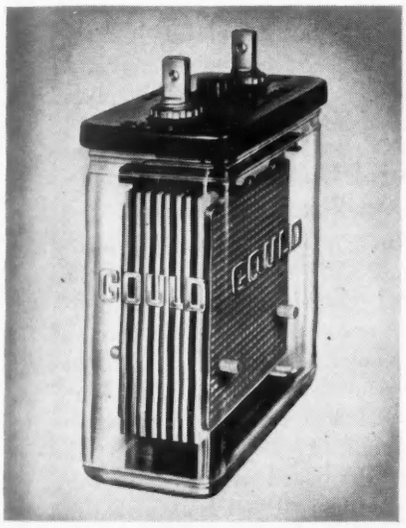
Dry disc rectifying units and other components are designed for long-life, trouble-free service. The Raytheon RectiFilteR will end your telephone power problems. Just plug it in, close the door—and forget it!



Money-saving RectiFilteR*.
"Just plug it in and forget it!"

Battery has lowest yearly cost

There's an easy way to save money on switchgear, signal and alarm systems or emergency light and power applications.



Gould Planté rolls up excellent service records—cuts maintenance to a minimum.

Amazing service records have proved that Gould Planté batteries have the lowest yearly cost of any battery you can use. Pure lead positive plates help make this possible.

For top operating economy, ask your Stromberg-Carlson representative for Gould Planté—the Aristocrat of Stationary Batteries.

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tial minority interest. "Our extensive engineering and manufacturing experience in telephone wires and cables, which has made us the leader in America, will be made available to the new firm," Mr. Bennett stated. Canada Wire & Cable Ltd. will operate the new company plant, which will be in full operation within one year. The factory is expected to be located in or near Winnipeg.

Officers of the new company are, Chairman of the Board, J. R. Bradfield, president of Canada Wire & Cable Co. Ltd. and executive vice president of Noranda Mines; Vice Chairman, I. T. Bennett, chairman of the board of General Cable Corp. Other officers include O. W. Titus, president, who is vice president of Canada Wire & Cable Co. Ltd.; J. R. MacDonald, vice president, who is president of General Cable Corp.; L. G. Lumbers, vice president, who is vice president of Canada Wire & Cable Co. Ltd. These officers, plus a representative of Telegraph Construction & Maintenance Co. Ltd., will serve on the board of the newly-formed company.

Stromberg-Carlson Advances Weis to Advertising Post

RAYMOND P. WEIS, Stromberg-Carlson advertising editor, has been appointed assistant advertising manager of the telephone division, according to Frederic W. Haupt, advertising manager of that operation.

Mr. Weis has been with the company since June, 1953 and has held advertising positions of sales promotion manager of the sound equipment division, and staff assistant and editor in the telephone division since March of this year. His former association in the advertising field includes 24 years with a Rochester, N. Y. agency, Hutchins Advertising Agency, as account executive and vice president.

R. P. WEIS

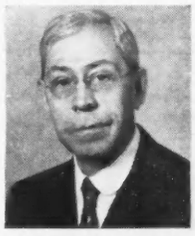
A past secretary and treasurer of the Rochester Industrial Advertisers, Mr. Weis has also served as a director of this organization as well as president and treasurer of St. Herman's 70-year-old Benevolent Society of this city. Active in the Rochester Ad Club, he served as its entertainment chairman last year, a position which tapped his abilities in the entertainment field. He has acted in over 340 performances of the Rochester Community Players with a record number of lead roles and directing and producing assignments. He has also authored and produced numerous skits and productions of social and business groups. Civic responsibilities have included, in addition, membership in the Advertising Council of Rochester, Civic Music Association, and the Holy Name Society (Blessed Sacrament Church, Rochester, N. Y.).

Mr. Weis is a co-author of "Practical Advertising Procedures," a $1000 award winning McGraw-Hill textbook used extensively as a classroom manual in colleges and universities.

Arthur Bessey Smith to Retire From Automatic Electric

DR. ARTHUR BESSEY SMITH, research engineer, inventor and long time pioneer in communications, will retire on August 31, according to an announcement by Automatic Electric Co., Chicago.

Dr. Smith is an alumnus of the University of Nebraska, from which he received a B.S. in E.E. degree in 1901. During the early years of his career, he worked for various telephone companies in Nebraska, Iowa and New York state. From 1905 to 1909 he taught telephone engineering at Purdue University. He received the Purdue University Electrical Engineering degree in 1907.



ARTHUR B. SMITH

Joining Automatic Electric in 1909 as assistant to the sales manager, Dr. Smith was soon transferred to the research department and has since devoted his professional career to research and development. He has been granted 31 patents by the U.S. Patent office in such fields of telephony as sub-station circuits and apparatus, transmitters, receivers, toll dialing, voice frequency repeaters, trunking systems and special services. He was the inventor of the booster telephone circuit.

Dr. Smith established the Automatic Electric Training School in 1912, serving as its director while continuing his research and development activities. He received the degree of Doctor of Philosophy in Physics from Northwestern Univer-

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Factory Service and Over-haul at No Charge and Returned Prepaid When Staples Purchased From Markwell

ONLY $10.75

"HOLDS WIRE SAFE AND SECURE"

For "JK" Wire .....Use L3B 5/16" Staples
Up to 11 Strand Cable Use L3M 7/16" Staples
Up to 16 Strand Cable Use L3D 9/16" Staples

OTHER USES — Stapling Drop Wire, Metal Numerals, Signs, Screens, Building Repairs and Maintenance, Etc.

SIZE	8 per pkg.	15 per pkg.	30 per pkg.
L3B 5/16" Leg	$2.75	$2.50	$2.25
L3M 7/16" Leg	2.90	2.75	2.50
L3D 9/16" Leg	3.10	2.95	2.70

STAPLES PER PKG. — 5000 . . . Sizes Can Be Assorted For Quantity Price . . . Discounts In Larger Quantities.

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The proved and standard protection for Underground Telephone Cables. Highest quality and full line of shapes.

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sity in 1926, based on his investigation of the phenomena underlying the slow acting relay. Dr. Smith is the author of many works, articles and technical papers on automatic telephony, telephone switching, transmission and allied topics, and was co-author with W. Lee Campbell of the book *Automatic Telephony*.

In 1934, Dr. Smith was elected a vice president of Automatic Electric Laboratories, Inc. He received the Talbot G. Martin Award in 1943 and the honorary degree of Doctor of Engineering by the University of Nebraska in 1950, both in recognition of his many contributions to the field of communications.

Dr. Smith is a Fellow and Life Member of the American Institute of Electrical Engineers, a Fellow in the American Association for Advancement of Science, Member of the American Physical Society, Member of the Western Society of Engineers, a Member of the Institute of Radio Engineers, Member of the Independent Pioneer Telephone Association and a Life Member of the Telephone Pioneers of America.

General Cable To Build Modern Plant In Illinois

TO SERVE THE constantly growing demands of telephone companies, General Cable Corp., the country's largest independent manufacturer of telephone wires and cables, will construct a modern, new plant in Monticello, Ill., according to an announcement made by I. T. Bennett, chairman of the board and J. R. MacDonald, president of General Cable.

Approximately 35 acres have been acquired for a modern plant specifically designed to meet the expanding requirements for paper telephone cable. The new plant will occupy some 50,000 square feet. It will be equipped with completely modern manufacturing facilities. New units will be added as necessary to meet the neeeds for additional production of General Cable products.

"This new manufacturing facility will increase General Cable's production of paper telephone cable by approximately 25%," Mr. MacDonald said. He went on to state that the initial plant facilities, specifically designed for manufacturing telephone cables, will be completed by November and in full operation by the end of the year.

R. E. Riggin, presently assistant

plant manager at General Cable's St. Louis factory, will take over the management of the new plant.

With the completion of the Monticello plant, General Cable will be operating eight factories.

National Electric Names DeLutis to New Post

THE APPOINTMENT of Thomas DeLutis as chief wire and cable engineer was announced last month by National Electric Products Corp., Pittsburgh, Pa. In his new position, Mr. DeLutis will be responsible for the design and production of National Electric's wire and cable products.

Mr. DeLutis, a veteran wire and cable engineer, graduated at Purdue University in 1933 where he earned a Bachelor of Science degree in electrical engineering. In former positions he has been charged with production scheduling, plant engineering and maintenance, and analysis and development of production techniques. He has taken part in many of the significant changes in engineering standards throughout the past 20 years, years which have seen tremendous strides in production and quality control.

T. DE LUTIS

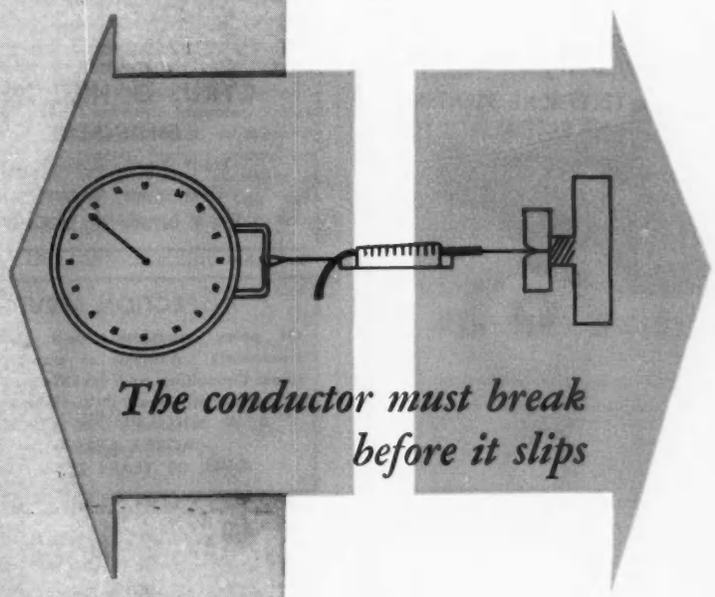
During World War II, Mr. DeLutis served as a Signal Officer with the United States Army. After intensive training at Rensselaer Polytechnic Institute, Harvard University, and the Massachusetts Institute of Technology, he was assigned to the Air Defense Command in Hawaii where he was charged with fighter control and radar equipment.

In 1951, he went to work for the United States Air Force as a cable consultant and specialist on ground equipment. He was Chief of the Interference Reduction Section whose job it was to maintain control of electronic emissions so they would not interfere with the operation of other types of communications equipment, commercial or military.

Mr. DeLutis is a member of the Institute of Radio Engineers and the National Academy of Science. While with the United States Air Force, he served on the Panel on Transmissions Lines and the Panel on Interference Reduction of the National Research and Development Board, Committee on Electronics.

ALPHADUCT

P clamp adhesion test



The conductor must break before it slips

P clamps are the most widely used method of attaching drop wire to buildings. Lest you may worry about a P clamp causing slipping of the insulation or jacket on Alphaduct Neoprene Jacketed Drop Wire — read about this Alphaduct service test. This test is made daily.

A sample of Alphaduct wire is inserted in a P clamp with 12 inches of the wire projecting from the top of the clamp. The bail of the clamp is then inserted in the upper jaws of a tensile testing machine, and the end of the wire is stripped free of jacket and insulation and inserted in the other end of the machine.

The jaws of the machine are then gradually separated until the conductor breaks. The conductor must break before there is ANY slipping of either the jacket or the insulation.

Don't have any worries about a little old P clamp hurting ALPHADUCT drop wire. Try Alphaduct. It's dated by a color coded thread so you can see for yourself how long it lasts, how much money it saves.

ALPHADUCT WIRE AND CABLE COMPANY • MILLTOWN, NEW JERSEY

NATIONAL DISTRIBUTORS • LEICH SALES CORPORATION, CHICAGO, ILLINOIS

REGIONAL DISTRIBUTORS • PANKEY SUPPLY CO., CHARLOTTESVILLE, VA.

THE LINDSAY TELEPHONE SUPPLY CO., CLEVELAND, OHIO

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Central Office Installations
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Stromberg-Carlson Names Wilson to Research Post

DONALD GREY WILSON, chairman and professor, department of electrical engineering, University of Kansas, has been appointed assistant director of research at Stromberg-Carlson Co., Rochester, N. Y., according to an announcement by Lynn C. Holmes, director of research. In this new position, Dr. Wilson will be responsible for co-ordinating organization functions and activities, development of personnel, guidance in budgetary control, and the coordination of the public relations activities of the research organization at Stromberg-Carlson.

D. G. WILSON

Dr. Wilson, who was born in Bridgeport, Conn., attended Rensselaer Polytechnic Institute, where he majored in electrical engineering and graduated with a B.E.E. degree. Later he earned his S.M., M.E.S., and Ph.D. degrees at Harvard University.

Prior to joining the department of electrical engineering at the Universit of Kansas in 1947, where he served as assistant professor, professor, and department chairman, he had broad experience in business and research at the Sealand Corp., Bridgeport, Automatic Fire Alarm Division; instructor in electrical engineering at Rensselaer Polytechnic Institute; staff member at the Massachusetts Institute of Technology, Radiation Laboratory; and while on leave from the University of Kansas, 1953-54, consultant, Aviation Ordnance Department, U.S. Navy Test Station, China Lake, California; and the General Electric Laboratory, Schenectady, N. Y.

Dr. Wilson is a senior member, Institute of Radio Engineers; member, American Institute of Electrical Engineers; American Association for the Advancement of Science; American Association of University Professors; and the American Society of Engineering Education. As a member of the Institute of Radio Engineers (IRE), he served as committee chairman for education in region six; American Institute of Electrical Engineers as a member of the instruments and measurements committee; and member and secretary of the electronics committee. He has also been elected to the following honorary societies: Tau Beta Pi; Eta Kappa Nu; and Sigma Xi; and is listed in the Who's Who in Engineering, American Men of Science.

This photograph was taken during a recent dial conversion performed by Southwestern States Telephone Co. at its Iota, La. exchange. It shows 15 units of the Universal Code-To-Selective Ringing Converter mounted below an electronic ringing generator adjacent to the charging equipment. Persons shown are (l.) J. M. Nelson, the Louisiana manager of Southwestern States Telephone Co., and W. J. Camp, who developed the Converter.

Paul L. Holt Joins Wyoming Valley Div'n

PAUL L. HOLT, Janesville, Wis., has been named Mid-Western sales representative for Sterling hydraulic control earth boring machines.

Mr. Holt's experience includes past employment with the J. I. Case Threshing Machine Co., Oklahoma City, Okla.; the Ford Motor Co., as traveling representative, purchasing and car distributor, tractor department and assistant manager of the Des Moines, Ia., branch where he was associated with W. G. Arnold, now executive vice president of Wyoming Valley Equipment Division, Kingston, Pa.; Chevrolet Motor Co., 1931 to 1942 as fleet sales manager and truck manager. He served in the Air Force during World War II. After World War II he entered the automobile business as a dealer.

In announcing Mr. Holt's appointment, Mr. Arnold stated that Sterling earth boring machines are now available in three sizes — Model "A" Heavy Duty — "Enterprises" 6 and 4 cylinder models. By August 15th a new "Prospector" model will be available for smaller telephone companies, REA Cooperatives and others who have need for a quality machine at a low price.

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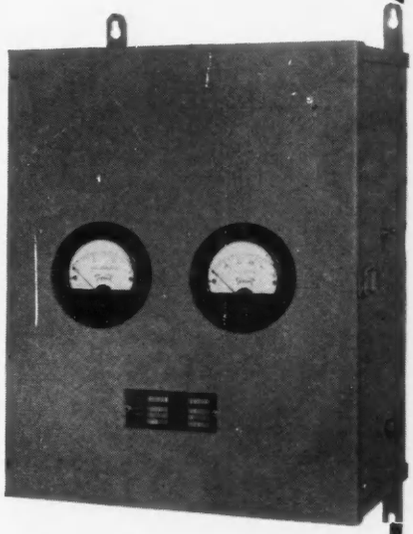

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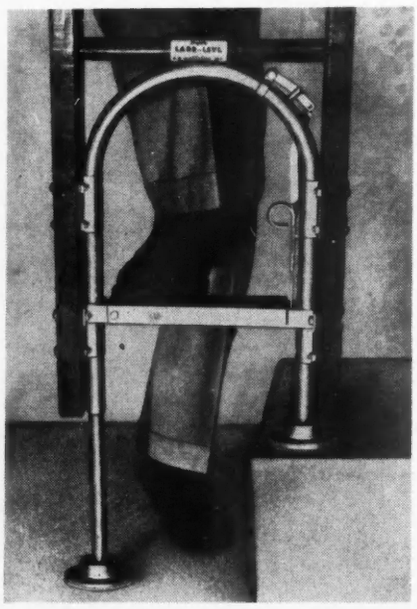

"Ladr-Levl"

A SAFETY DEVICE that demonstrated conclusively in exhaustive tests that it eliminates most of the accidents commonly associated with the use of ladders, has been put on the market by H-B Industries, Inc., 1401 Middle Harbor Road, (Dept. TE&M), Oakland, Calif.

Patented under the name of Ladr-Levl, it is easily attached to any ladder, wooden or metal. Its self-adjusting legs adapt themselves to any terrain, no matter how uneven, and permit the ladder to stand upright securely. Slipping is prevented by non-skid, swiveling feet. For use on stairways or steps, its legs take a full 9½" riser.

When the user puts his weight on the first rung, the mechanism locks automatically in place, and can be unlocked only by hand. The Ladr-Levl has been use-tested for a number of years by painters, glaziers, contractors, electricians, public utilities, maintenance men, outdoor advertising firms, and construction companies. It has been in rigorous daily use under the supervision of university research workers, and it has proved itself unfailingly safe and dependable.

Other important advantages of the Ladr-Levl are — the weight of the ladder is always directed downward along the side rails, eliminating lateral stresses; the device can be easily installed by the purchaser, and can be transferred from ladder to ladder. It pays for itself because it increases ladder life by eliminating lateral stresses. It eliminates makeshift, unsafe leveling devices, such as wood blocks or bricks, and does away with the need of a second man.

Ladr-Levl is manufactured to a

IN THE MIDST of heavy traffic, with cars and big trailers whirling past, this girl is telephoning at a busy street intersection without noise interference in the first outdoor, doorless Acousti-Booth ever built. To check public acceptance of the booth, its designers, Burgess-Manning Co., Architectural Products Div'n., 5970 Northwest Highway, Dept. TE&M, Chicago, Ill., and the Middle States Telephone Co., are currently making co-operative tests of the booth at Algonquin Road and Lee Streets, Des Plaines, Ill. Tests, at the height of vehicular traffic, showed that telephone conversations could be carried out comfortably and that traffic noise was virtually inaudible at the other end of the line. The booth is a special design of Model 45 and was developed in response to requests for an acoustically efficient "walk-in" booth for all types of outdoor locations where noise is a problem. The Booth is somewhat larger than previous models to withstand outdoor conditions and to give added protection and a complete sense of privacy to the telephone user. Installation of the booth is very simple. It can be clamped to any conventional light or yard pole, or to a special steel pole with an adequate concrete footing.—Check New Product 846.

minimum 1,000 lb. ladder load test, and is fabricated of a special aluminum alloy that has the strength of steel, the lightness of aluminum — it weighs only 5 pounds. It is guaranteed for a full year.—For complete data, ***Check New Product* 847.**

Electric Plants

MULTI-MATIC CORP., Van Nuys, Calif., has announced its new models 17A and 17D Gen-A-Matic electric plants.

The 17A is an AC model Gen-A-Matic with a four-cycle engine. Weighing only 95 pounds, the new 17A Gen-A-Matic has lost 20 pounds in the Multi-Matic streamlining, but has even greater overload capacity. It puts out 1.7 kilowatts offering assured, steady power for standby use and mobile applications. A 12-volt crank winding that provides for easy installation of push-button or automatic control is standard equipment.

The new 17D Gen-A-Matic is the DC model of this new design. It also has been lightened for extreme portability. Fuel capacity of both models has been increased to five quarts from the former one gallon capacity. Increased fuel economy has also been made possible through the design revisions of these Gen-A-Matics. — For complete data, ***Check New Product* 848.**

Bolt Loosener

PARTICULARLY suited to electrical work is a new chemical product, the first non-oily penetrant for loosening corroded nuts or bolts and larger seized parts of appliances and other electrical or mechanical equipment. The penetrant is nonflammable and odorless, which averts consumer complaints concerning oil residues. It is generally more effective than oil, being fast acting and penetrating deeply. It does not spread over the work. Developed by Olin Mathison Chemical Corp., Puritan Penetrant is sold through NAPA jobbers and is available from automotive service stations and garages in half-pint, pint and gallon containers. The penetrant can be applied by pour spout or squirt gun. After several minutes, the work is tapped lightly. Parts then can be disassembled. For complete data, ***Check New Product* 849.**

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ADVERTISING, Directories — *General Telephone Directory Co., 1800 Busse Highway, Des Plaines, Ill.*—[ADV. 1]

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BELTS — CLIMBERS — PLIERS — SAFETY STRAPS — CONSTRUCTION TOOLS. *Klein & Sons, Mathias. 3200 Belmont Ave., Chicago 18, Ill.*—[ADV. 3]

BOOTHS—Acoustic Telephone — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 4]

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CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — *Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 7]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 8]

FURNACES — For quickly and economically melting lead and paraffin — *Mutual Liquid Gas Equipment Co., Inc., 3600 W. Imperial Highway, Los Angeles, Calif*—[ADV. 9]

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LIGHTWEIGHT PULLERS — *Coffing Hoist Company, 800 Walters St., Danville 5, Ill.* — [ADV. 11]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.*—[ADV. 12)]

POLE HOLE DIGGERS — *For derrick mounted trucks. Tele-E-Lect Products, Inc., 9613 Minnetonka Blvd., Minneapolis 16, Minn.* —[ADV. 13]

POLES, Southern Yellow Pine — *Colfax Lumber & Creosoting Co., Inc., P. O. Box 23. Pineville, La.*—[ADV. 14]

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 290 E. Main St., Spartanburgh, S. C.*—[ADV. 15]

POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 16]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 17]

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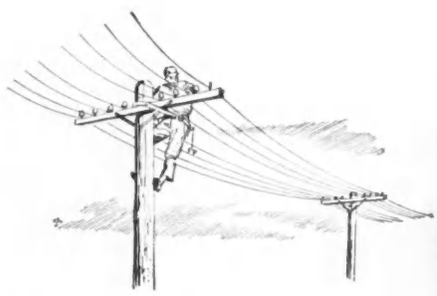

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Leeds & Northrup Names Moat to Marketing Post

THE APPOINTMENT of Donald E. Moat as assistant director of marketing of the Leeds & Northrup Co., Philadelphia, Pa., has been announced by I. Melville Stein, president of the Germantown instrument manufacturer. Formerly district sales manager in the Leeds & Northrup Cleveland office, Moat will be acting head of the marketing department here, succeeding the late L. E. Emerich.

Moat graduated in 1924 from Rensselaer Polytechnic Institute with a degree in mechanical engineering and in 1925 joined Leeds & Northrup as a sales field engineer. He has been a trustee of his college and last year was awarded the Albert Fox Demers medal "for service to the Rensselaer Polytechnic Institute."

He is a past chairman, Cleveland section, American Institute of Electrical Engineers, former chairman of the AIEE national committee on transfers, and in 1951 was general chairman of AIEE's national fall general meeting.

He is a trustee of the Cleveland Engineering Society, past president of Cleveland Technical Societies Council and past chairman of the council's public affairs committee.

Kellogg Names Bender Sales Representative

O. C. BAILEY, assistant sales manager of Kellogg Switchboard & Supply Co., a division of International Telephone & Telegraph Corp., has announced the appointment of R. O. Bender as a sales representative. Mr. Bender, formerly a switchboard sales department supervisor, will travel the northern California and Northern Nevada territory of the Pacific Coast Division under K. C. Tompers, division manager. His home office will be in San Francisco, Calif.

R. O. BENDER

A member of Kellogg's Switchboard Sales Department for 3½ years, Mr. Bender was appointed a switchboard sales department supervisor last year. Prior to this time his responsibilities included the processing of estimates and orders associated with crossbar, relaymatic and step-by-step dial equipment, as well as all types of manual equipment.

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VOL. 4, NO. 5 AUGUST, 1955

Relay Design Calculations

by George Mac Cheyne, Apparatus Engineering

An electrical relay consists essentially of a coil of wire wound around a soft iron core and an iron flap or "armature" which is attracted to the core when the iron is magnetized; the motion of this armature performs the work expected of the relay. As commonly used in telephone applications, the coil may be provided with very little current. This, however, magnetizes the iron sufficiently to move the armature, which in turn actuates one or more sets of contact springs. These contact springs are part of an electrical circuit which includes a local source of current, possibly a stronger current. The original weak current is thus made to trigger a stronger current in this circuit.

Magnetic Circuit

In addition to the electrical circuits associated with a relay coil and contact springs, we have also to consider the magnetic circuit of the relay. This is often arranged as shown in Fig. 1. Here we have the core "C," the frame "F" and the armature "A," usually hinged, so that as it is moved the magnetic circuit opens and closes. We refer to the varying space between the armature and the end of the core as the *working gap*, and the similar smaller space between the armature and the end of the frame as the *fixed gap*.

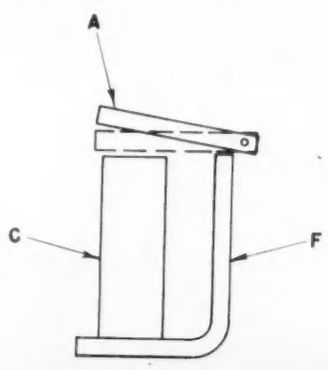


FIG. 1

Not Quite Alike

There is an exact analogy between an electrical circuit and a magnetic circuit. In the electrical circuit we are guided by Ohm's law; the voltage is equal to the product of the current and the resistance. In the magnetic circuit we have the magnetomotive force equal to the product of the flux and the reluctance. But while we have this theoretically perfect analogy between electrical and magnetic circuits, there are important practical differences. In the magnetic circuit the reluctance depends on the flux, which is not the case in the electrical analogy. Furthermore, there is much more leakage in magnetic circuits, for which no insulation is available.

In order to develop sufficient force for the armature to do its work, we have to keep the reluctance of the magnetic circuit at a minimum. Proper design of the gaps helps in minimizing the reluctance. In general, the reluctance is proportional to the length of the gap. In the Stromberg-Carlson A-type relay we have a fixed gap of very low reluctance, made possible by the knife-edge design illustrated in Fig. 2. Another factor that helps to reduce the reluctance in the A-type relay is the large cross-sectional area of the frame.

Design Variables

When we begin the design of a relay, we must know the mechanical force, occasioned by the strength of the contact springs, which tends to hold the armature open; that is, away from the end of the core. We must also know the distance the contacts have to move in order to do the switching and provide suitable contact pressure. With this information, we are able to compute the length of the working gap, both open and closed. Then, on the basis of the known physical properties of the iron we intend to use, we choose the maximum flux density in the working gap and the flux density at which the iron is to be operated. These figures must take into account the leakage of flux, which in turn depends on the shape and size of the magnetic structure. The shape and size depend on the intended use of the relay. We may want the most sensitive relay possible for a given space; or perhaps the smallest relay possible to do a given

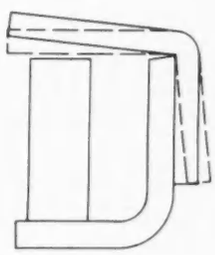


FIG. 2

amount of work; the design will be different for each case.

Having established the principal features of the design, we proceed to compute the magnetization and demagnetization curves of the entire relay. This enables us to design the exciting coil and to predict performance. We have to compute these curves point by point, as they are based on the hysteresis loop for the iron, for which we have no analytical representation. As this loop reflects only the reluctance of the iron itself, we have to adjust each step for the reluctance of the two gaps and also for leakage. We come out with a graph representing the magnetic cycle of the relay, shown in Fig. 3.

We start with the armature open, at "a". As the current starts to flow in the coil, the coil magnetomotive force begins to increase, since it is the product of the current and the number of turns of wire in the coil. The flux begins to rise along the curve a-b. At point "b" there is enough force to start the armature moving, and as the current continues to rise, the armature closes and flux rises along curve b-c. When the current in the coil is shut off, the flux begins to fall. Due to decreased reluctance of the entire magnetic circuit and to hysteresis, the flux falls along the curve c-d. When it has fallen to "d," the armature begins to open; the reluctance increases greatly, and the flux falls to "a." From the graph, we know the coil magnetomotive force "f" needed to excite the relay and design the coil accordingly. There is also a value of coil magnetomotive force associated with point "d" from which we can deduce the current at which the armature will begin to open.

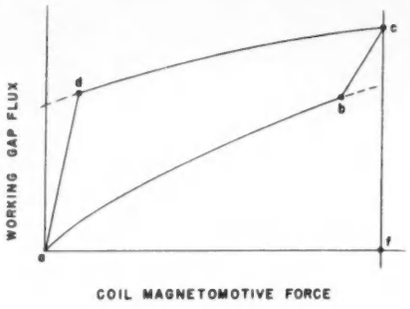


FIG. 3

Tests have shown that this procedure for calculating some of the characteristics of a proposed relay in advance of model making produces satisfactory results when properly carried out.

Standard Telephone Co. Scores a Double-Header

New XY® Dial System in Hiawassee, Ga.

Below: H. M. Stewart, left, president of the Standard Telephone Company discusses operation of new 100-line XY Dial exchange with Mayor C. L. Young of Hiawassee. This is one of nine exchanges operated by the company, blanketing six counties in northern Georgia. Right: New XY equipment building in Hiawassee.

Young Harris, Ga., Cuts In New Common Battery Exchange

Below: Dr. R. Charles Clegg, president of Young Harris College, makes first call through the new Stromberg-Carlson No. 106 common battery switchboard at Young Harris, Ga. On the receiving end of his call is (bottom of page) E. C. Nicholson, mayor of Young Harris, and manager of the Blue Ridge Electric Association.

STROMBERG-CARLSON transmitter

Meet Three of Our Midwest Representatives

M. T. Bolluyt. Out of the midwest recently came the plaintive cry of the forsaken father — a mournful note known and understood by many.

M. T. Bolluyt, Stromberg-Carlson representative in the state of Illinois, sent us the sad-glad tidings that his daughter Shirley was married in June, and "now we are back where we started, just Ann and I."

"Back where we started" for the Bolluyts is the town of Orange City, Iowa. Here it was, in 1927, that Marty Bolluyt began his career in telephony — and met the girl who became his bride in 1931. He started as lineman for the McGraw Electric Company, which eventually became the Central Telephone Co. When dial

operation was cut over at Sac City, Iowa, Marty was sent there as wire chief, and after a year he became manager of the exchange. A year later he was district manager.

He transferred, during the depression, to Western Illinois Telephone Co., at Aledo, Ill., where he had charge of five towns.

As his company grew, so did the responsibilities of M. T. Bolluyt. Commercial manager of the holdings at Park Ridge and Des Plaines, Ill.; then commercial manager of the big LaCrosse, Wis., exchange.

In 1944, he joined the Stromberg-Carlson organization, as a representative throughout the state of Illinois. He is glad to be able to maintain close association with the operating companies he has known all through his 28-year career in telephony. And on the side he keeps several hobbies going — hunting, fishing, collecting U.S. stamps, gardening and (he says) answering the mail the same day it arrives!

V. C. Burchett. A young schoolteacher named Victor C. Burchett was becoming fidgety, back in 1937. He enjoyed instructing his students, had been doing it for five years, but somehow wanted to break free from the routine into new fields.

He learned that the local telephone exchange, Grand River (Iowa) Mutual Telephone Co., was looking for a manager. He applied. They liked him, and soon he was learning the telephone business the hard way, while his wife was chief operator and bookkeeper.

They stayed at this job three years, during which they recabled the whole town, and then decided to try for a bigger job at Rockford, La. Vic became manager of the exchange there, for Farmers Mutual Telephone Co.

When World War II hit, the Burchetts moved to Parsons, Kansas, where Vic applied his hard-earned telephone knowledge to the war effort, by working in the Telephone Division of the Kansas Ordinance Plant operated by Johns-Manville.

The opportunity arose to become Stromberg-Carlson representative for North and South Dakota, and Minnesota in 1946, and as Vic says, "believe me not a dull moment since."

Today, the Burchetts live in Redwood Falls, Minn., and have three children — James, 16; Judy, 12; and Frankie, 8. Big moments for Vic are those occasions when he can get into those northwest wildernesses to hunt and camp. Pheasant, deer, antelope — his success at hunting these is attested by a trophy which you will find on display in his office.

William W. Blair. Bill Blair was ushered into the telephone business by the military route.

At the age of 20, he was installing dial equipment in San Juan, Puerto Rico, with the Army Signal Corps. He was stationed there from October 1941 to December 1943, and then was ordered into the rough-and-tumble of army communications in a war zone. For a year, he was in charge of a 15-man switchboard installation team operating in the China, India, Burma Theatre.

After his discharge from the Army in 1945, he became wire chief at the Army Service Depot, Columbus, Ohio (a civil service job).

In 1947, he joined the Minnesota Telephone Co. at Minneapolis, where he spent five years in central office equipment engineering. In 1952, he became Stromberg-Carlson's sales representative for the state of Iowa.

Bill lives in Knoxville, Iowa, where one of his hobbies is playing golf. He reports that "Earl Bellamy, president of our local telephone company, can beat me — at times."

A big ambition of Bill's is to organize and manage a "Little League" baseball team in Knoxville, Ia. Baseball is a favorite hobby, (he's a Chi-

cago Cub fan) and by the looks of the family he's amassing, one might think the Blairs are planning to raise their own ball team. Significant fact: every one of their four children has been born in July — the heart of the baseball season.

Bill and his wife Joyce take immense and well-deserved pride in their lovely family. In fact, Bill's idea of the perfect vacation this summer is to stay at home and enjoy family life for two weeks.

STROMBERG-CARLSON transmitter

Cutover at Trumansburg. L. to r.: J. Fred Allen, Robert H. Griswold, W. Malcolm Griswold, H. H. Griswold.

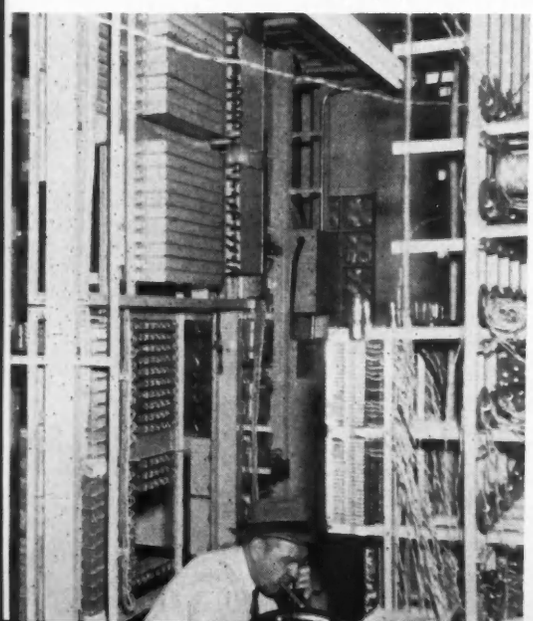
Gone is the gong:

The Dynamic Growth of Two Central New York Telephone Companies . . .

In his best-seller, "Country Lawyer," author Bellamy Partridge tells of Old Tick, the innkeeper, who called his guests to lunch with a loud gong on the main street of Phelps, N. Y.

This, in the 1860's, was sufficient communication system for the town. In a later book, "Salad Days," Mr. Partridge writes that in the early 1900's his father's law office had one of the only three telephones in town.

XY® equipment at Ovid.



Somewhere between the reminiscences of Mr. Partridge and the present day, Phelps underwent a tremendous surge of growth and acitivity, for today it is the home office for *two* well-managed telephone companies. Both the Ontario Telephone Company, Inc., and the Trumansburg Home Telephone Company have their headquarters in Phelps.

Both companies are under the management of a three-generation family team. H. H. Griswold is president. His son, Malcolm Griswold, is vice president, general manager and treasurer. And a grandson, Robert, is assistant secretary and commercial manager. Raymond D. Reynolds is secretary and auditor.

The Ontario Telephone Company is quite unusual, in the fact that it covers an area measuring 8 miles square, consisting of the towns of Phelps and Clifton Springs. Only one line is five miles long, while most lines are concentrated in the center of town. The company has a total of 2,100 stations. Plant superintendent is Fred A. Grimsley.

The Trumansburg Company has exchanges at Interlaken, Ovid and Trumansburg, and has 3,300 stations. J. Fred Allen is plant superintendent.

When the Griswolds acquired the company in 1927, a complete rehabilitation program had to be started to put it into efficient working condition. This program was well under way in 1936, when a sleet storm of hurricane proportions swept down on the area like a malicious child knocking over a sand castle, and left a twisted mass of cable, wire and poles in its wake. Over 1,100 poles were toppled over in a single day.

Black days followed, but careful planning and fixed determination pulled the company through. By steadily increasing the scope of its own service, and by three acquisitions of other systems, the Griswolds increased their company from the 550 telephones it had in 1927, to over 3,300 subscribers today.

At Ovid, Malcolm Griswold stands in front of new XY dial building, door of which bears a poster advertising Trumansburg Home Telephone Company preferred stock.

It acquired the Ulysses Cooperative Telephone Company, the Ovid Telephone Company, and the state-owned telephone system at Willard State Hospital.

In 1950, a new program of modernization was undertaken. When completed, it will include rebuilding the outside plant, constructing three buildings, installing new switchboards, modern dial equipment and new telephones at a cost of half a million dollars.

To partially finance a program of this nature, the company offered Common and Preferred Stock. But, instead of having a brokerage firm sell the issue for them, the Griswolds simply offered it to their subscribers, employes and friends.

So great is the faith of H. H. Griswold's neighbors (they kept him in as mayor of Clifton Springs for 8 years) that they bought up the entire stock issue, with the statement: "We don't know what you people are up to, but we like you and if you say it's all right, then here is our money."

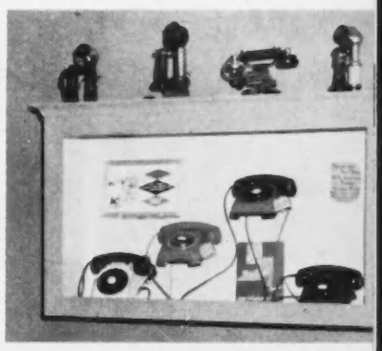
So far, modernization has proceeded at a good clip.

A remarkable example is the exchange at Ovid. On March 25, 1953, this town cut over to an XY Dial System. There were 700 subscribers at that time. Today — just 2½ years later — there are 1200 subscribers in Ovid, almost doubling the previous size of the exchange.

Most recent cutover to dial was Trumansburg, which put its new XY system into operation May 18, 1955. This exchange has 1400 stations.

Phelps and Clifton Springs are also on the books as future XY exchanges. Clifton Springs will cut-over in December of this year, and Clifton Springs in June of 1956, after the completion of a new office building.

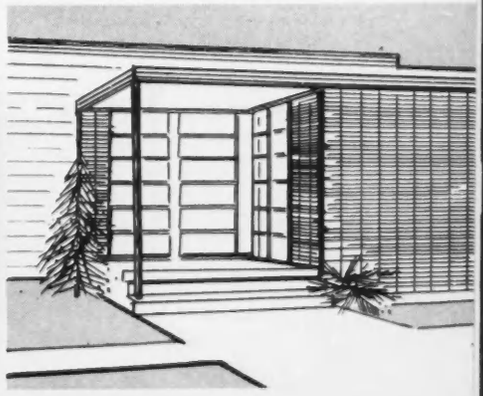
As these telephone companies emerge as two of the best-run, most modern Independents, you can bet your bottom dollar that a good share of the credit goes to the wise planning and excellent public relations of men like H. H. Griswold and his sons.



New office at Phelps. Above: Exterior is modern and attractive.

Upper right: Display of old telephones and new Stromberg-Carlson color telephones, in the Phelps office. Right: Pleasant working conditions in the new building.

One of the first steps in new modernization program was to build a new home for Interlaken's 4-position manual board and toll facilities for Ovid, Lodi and Interlaken. In picture at left, you see telephone company office (small building) and home of operator. Center: when operator's home was purchased and razed to make way for new building, telephone office conducted "business as usual." Right: modern new telephone building was erected on site of old house, and temporary facilities were torn down.



STROMBERG-CARLSON transmitter

Automation Research Probes the Future for New and Better Manufacturing Methods

Automation — the most dynamic term in industry today — is having its effects at Stromberg-Carlson. As a result, an Automation Research group has been developed under the guiding hand of Howard Gleason. This group is part of the Company's present Research and Development Department and has, as its primary objective, the consolidation of Stromberg-Carlson's efforts in the complicated and rapidly expanding field of automation.

Evolving from a study of automation as applied to Television Assembly, a research group was formed to study the problems and techniques of automation and to apply them to every division at Stromberg-Carlson.

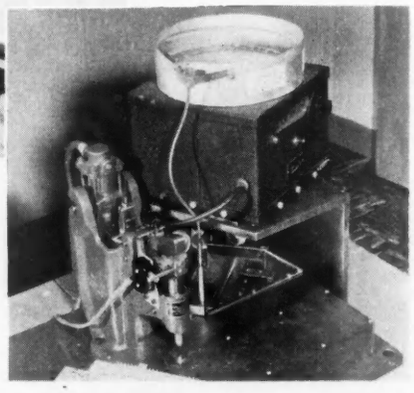
"Automation," says Howard Gleason, "is an all encompassing term that can be applied to production, engineering, business management, sales and the like."

In working toward their goal of complete automation, this research team has done extensive work on printed wiring boards, as well as research and development in the application of advanced methods of switching. This includes printed switches and wire banks, and automatic assembly of telephone components and equipment. Other accomplishments consist of designing and building machines and equipment that are aids to automation programs.

This research group also acts in an advisory capacity to Telephone Engineering and Production Engineering in establishing standards for the more efficient usage of printed circuits, automatic fabrication and assembly. Special plating techniques have also been devised to maintain the high standards of telephone equipment.

Howard Gleason, the guiding hand of the Automation Research Laboratory.

A preview of automatic operation in the factory of tomorrow: Terminal Inserter, designed and built by this group, semi-automatically inserts and stakes posts in terminal or printed wiring boards.



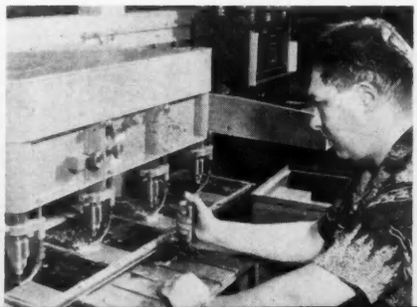
Mechanical design section of Automation Research Laboratory consists of l. to r.: Harlan Van Over, Jim Wanner, Roger Vance, and Bob Koch.

The electronic design section of this laboratory is capably manned by Bob Herrman and Joe Tondat.

Great controversies are currently raging over the definition of "automation." The term is most frequently used in reference to production, although its principles may be applied, as Mr. Gleason states, to sales, management, engineering and other phases of industry. Reduced to its essential elements, "automation" is a system of operation which provides control over each step in the process without requiring manual processing, inspection, or compensating adjustments. These principles have been used in the Petroleum Industries for the refinement of crude oils to manufacture gasoline products at a quality and at a price unobtainable by any other process.

Warren Schneider drills holes in four terminal blocks simultaneously with this semi-automatic multiple-spindle drill, during studies conducted by the Automation Research group.

L. to r.: Ely Bagg and Fred Haskins inspect fully equipped printed wiring board.



STROMBERG-CARLSON transmitter

4 More Tennessee Towns Now Served by XY Dial . . .

On March 26, a modern new XY dial exchange was cut over at New Johnsonville, Tenn. This exchange provides service for the residents of New Johnsonville, Plant, Hurstburg and Denver.

The exchange, operated by the Humphreys County Telephone Co., consists of 120 lines XY dial.

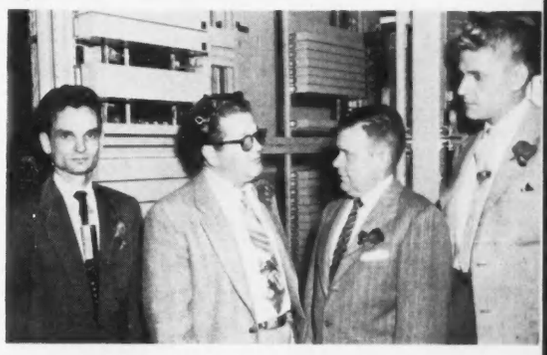
James S. Corbitt, president and general manager of the telephone company, entertained 40 guests at a special luncheon at the time of cutover. Among the notables present was Cayce L. Pentecost, Public Service Commissioner of Tennessee.

The Commissioner commended Corbitt and the board of directors of the company for their work in bringing the new system to their subscribers. He cited particularly the importance of good, modern communications systems as a factor in bringing new industry into Tennessee. While the state has been extremely active in promoting its vast power supply for big industry (TVA is the big factor here), Commissioner Pentecost pointed out that industries are looking for a good communication system, too.

New Johnsonville is particularly aware of the great impact of the Tennessee Valley Authority project. It is a new town, which had to be erected on a new site, to replace old Johnsonville, because the latter city was flooded as part of the TVA plan.

At the Humphreys County cutover, the first call over the system was made by a county official, Judge Lunn McKeel, to the district's representative in Congress, Ross Bass.

Other significant events at the luncheon included a tribute to the retiring operator, Mrs. Dora Inman, and the introduction of Mrs. Emma Stribling, first operator of the exchange when it was installed in 1902.



AT NEW JOHNSONVILLE CUTOVER: (l. to r.) R. M. Smith and D. H. Payne, Stromberg-Carlson installers; James S. Corbitt, manager of Humphreys County Telephone Co.; R. J. Wentis, Stromberg-Carlson representative.

"All Hands" Join in as Beggs, Okla. Cuts to XY . . .

Celebrating new XY System are (l. to r.) Forest Hand; Mr. and Mrs. O. H. Mullins, Inola Telephone Co.; Mrs. Forest Hand and daughter Kay; William Riley, Stromberg-Carlson sales engineer; Earl Messecar, general manager Oklahoma Telephone Co., and president Oklahoma Telephone Association; Tom Sheard, Salina Spavina Telephone Co., Pryor, Okla., and Earl Daniels, Stromberg-Carlson installer.

A determined family and a helpful salesman were the key figures when the Beggs Telephone Company cut over its new 270-line XY Dial System on May 27 this year.

The company is owned by the Hand family. Sam Hand purchased it in 1928 and operated it till his death in 1940. His son, Forest Hand, took over active managership, and began to plan converting to dial. But war interfered, and modernization was out of the question.

After the war Forest Hand and his mother, Mrs. Noni Hand, renewed their hope for dial. And at just the right time, along came a sales representative named Frank Micka, with a finance plan that seemed just right for the Beggs company. Negotiations were completed, and the Hands began to prepare for their new XY Dial System, purchased with the help of Stromberg-Carlson financing.

Three generations of the Hand family were in attendance last May when the new system was cut into service. Mrs. Noni Hand, widow of Sam Hand; her son Forest and his wife; and their daughter Kay. They were joined by many warm friends from their community, and from neighboring Independent telephone companies.

Forest Hand and his mother, Mrs. Noni Hand.

Kay Hand pulled the first pick at time of cutover to XY Dial.

STROMBERG-CARLSON **transmitter**

How's this for Trouble-Shooting?

There's a lady in Lufkin, Texas, who now has a much better idea of what people mean when they speak of the tremendous service provided by Independent telephone companies.

This lady had troubles. Sometimes she could hear her telephone ring, sometimes she couldn't. She called the Lufkin Telephone exchange of Southwestern States Telephone Co., and asked for a repair man.

The maintenance man came, inspected the phone, could find nothing wrong.

A few days later, the same lady called in with the same "don't ring at times" trouble report.

Again a service call and complete inspection. Again no trouble discovered.

When the third complaint came, the service man patiently checked over her telephone again. He worked carefully, leaving no margin for error.

Then he discovered the trouble. A loose connection in the lady's hearing aid. He soldered it for her.

She reports her telephone is ringing OK now.

This Can Be Yours - -
MODERN TELEPHONE SERVICE
WITH A NEW DIAL TELEPHONE IN YOUR HOME
FAST CONVENIENT SERVICE — 24 HOURS EACH DAY
Northern Kansas Telephone Co.
Effingham, Kansas

How Northern Kansas Telephone Co. Is Selling Its Stock to Subscribers

In this simple, clearly written 4-page folder, the Northern Kansas Telephone Co. explains exactly how it plans to bring modern dial service to 13 of the communities it serves.

It goes on to explain the method of financing this project, and recommends to the subscriber that he help by purchasing the 6% preferred stock being offered.

To back up this recommendation, the folder reproduces an article by Roger Babson, noted financial consultant, in which he praises the Independent telephone industry and recommends that investors purchase stock in their local company, as a good investment.

The folder includes a coupon for the reader to mail or bring to the company office at Effingham, Kansas, asking that a certain number of preferred shares be set aside for him.

This is a simple, highly effective way to help bring your subscribers into the "family" of your company, win their greater loyalty, and keep them fully informed on what you as a telephone manager are trying to do for them.

This Switchboard Could Tell Many Tales of Yesterday

Here is another in our series of pictures showing rare old switchboards. This magneto board was in high style in its time, and could probably regale us with many stories of telephone operation in its infancy.

This picture was sent to us by our customer in Vardman, Mississippi. Have you an antique board that might be of interest to our readers? Send us a picture of it — and any fact you may have about its make, operation, years in service, etc.

Published by Stromberg-Carlson . . . makers of Famous XY Equipment

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INDEX TO ADVERTISING

Acme Visible Records, Inc. 11
Acorn Insulated Wire Co. 92
Alphaduct Wire & Cable Co. 85
American Appraisal Co. .....
American Creosoting Co. 7
American Tel. & Tel. Co. 58-59
Amplifier Corp. of America .....
Ansonia Wire & Cable Co. 25
Armstrong Cork Co. 92
Automatic Electric Sales Corp. 8, 20, 23, 52-53, 90, 103

Bashlin Co., W. M. 86
Behnsack Equipment Co. 91
Berry & Co., L. M. 2
Inside Front Cover
Bishop Manufacturing Corp. .....
Buckeye Telephone & Supply Co. 69, 91
Buffalo Weaving & Belting Co. 76

C & D Batteries, Inc. 24
Cable Spinning Equipment Co. 26
Calculagraph Co., Inc. 33
Chance Co., A. B. .....
Commercial Cord & Supply Co. .....
Communi-Catering 86
Communication Equipment & Engineering Co. .....
Cook Electric Co. 44
Copperweld Steel Co. 13
Corey Steel Co. .....
Cowan Associates, B. S. .....
Crane, Carl C. 86
Cullom & Ghertner Co. 86

Davis Construction Co. 86
Donnelley & Sons, R. R. 69
Exide Industrial Div'n. The Electric Storage Battery Co. 19
General Cable Corp. 3
General Electric Co. .....
General Insulated Wire Co., Inc. 4
General Telephone Directory Co. 104
Back Cover
Gladwin Plastics .....
Gould National Batteries, Inc. 35
Graybar Electric Co. .....
Greenlee Tool Co. 66

Hackett, Wes 91
Hannon Associates, J. W. 86
Harris-McBurney Co. 86
Henkels & McCoy 91
Highway-Trailer Co. .....
Hill Engineers, Inc. Cyrus G. 86
Hughey & Phillips .....

Independent Tel. Repair Co. 91
Indiana Steel & Wire Co. 18
Instrument Laboratories .....
International Harvester Co. 39
International Standard Electric Corp. .....
International Standard Trading Corp. 34
Irwin Auger Bit Co. .....

Kaiser-Willys Sales 80-81
Kander, Allen 84
Kato Engineering Co. .....
Kaufmann, H. J., Co. .....
Kearney, James R., Corp. .....
Kellogg Switchboard & Supply Co. 28-29, 30-31, 69
Kimble Glass Co. .....
King, W. T. 86
Klein & Sons, Mathias .....
Koiled Kords, Inc. 81

Leich Sales Corp. 48-49
Line Material Co. — A McGraw Electric Co. Div. 57
Loomis Advertising Co. 27
Lorain Products Corp. 80
Lowell Insulated Wire Co. .....

Mahood, Edwin T. 86
Markwell Mfg. Co. 84
McCabe Powers Auto Body Co. .....
Metropolitan Telephone Supply Co. .....
Mine Safety Appliances Co. .....
Mitchell, Jay G. 86
Murphy Engineering Laboratories, Inc. 38

Natco Corp. 84
National Telephone Supply Co. .....
Neale Construction Co. .....
North Electric Co. 16-17
Northwest Radio & Television School 86

Owens Illinois Glass Co. 61
Ostlund, Evert M. .....

Page & Hill, Inc. 26
Penn Line Service .....
Petersen Engineering Co. .....
Piedmont Wood Preserving .....
Porcelain Products Inc. .....
Power Equipment Co. .....
Preformed Line Products Co. 62

Raytheon Manufacturing Co. .....
Reliable Electric Co. 40
Remington Rand, Inc. 12
Republic Creosoting Co. .....
Rex Corporation .....
Reynolds Metals Co. 21
Roanwell Corp. .....
Rockingham Construction Co. .....
Roll-A-Reel Corp. .....
Runzel Cord & Wire Co. 74
Ryan Co., F. B. 91

Safety Tower Ladder Co. .....
Schauer Manufacturing Corp. 87
Seymour Smith & Son, Inc. .....
Sloan, Cook & Lowe 86
Stahl Metal Products .....
Stewart Bros. .....
Stromberg-Carlson Co. 42-43, 78-79, 82-83, 86, 90, 93-100
Superior Cable Corp. 5
Suttle Equipment Co. 86, 101

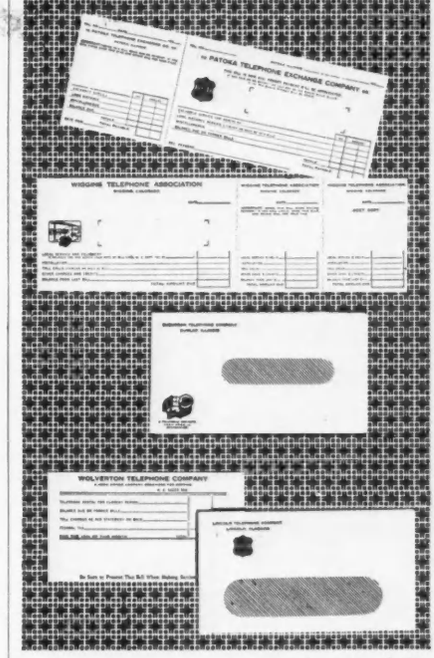
Tallen Co., Inc. .....
Taylor-Colquitt Co. 38
Telefon Fabrik Automatic A/S .....
Telectric Co. 76
Telephone Answering & Recording Corp. .....
Telephone Engineer Publishing Corp. .....
Telephone & Power Supply Co. 86
Telephone Repair & Supply Co. .....
Telephone Supply Corp. .....
Teletype Corp. 22
Telkor, Inc. 86
Thompson Chemicals Corp. 74
Tool Design & Equipment Co. .....

U. S. Independent Tel. Assoc. 67
U. S. Motors Corp. .....
U. S. Steel Co., Coal Chem. Div. 32
U. S. Steel Co., (American Steel & Wire) .....
Utica Drop Forge & Tool Corp. .....
Utility Tool & Body Co. 81

Western Electric Co. 36-37
White Motor Co. 15
Whitney Blake Co. 75
Wiebel, Inc., L. H. .....
Williams, Geo. E., Co. 91
Williams Inspection Co., A. W. 86
Wooten & Co., L. C. 86
Wyoming Valley Equip. Co. .....

York Hoover Corp. .....

Billing Supplies Made To Your Order In Suttle's Print Shop



A telephone man knows the way billing forms should be made up to fit in with his particular method of billing. But, sometimes it is hard to get the forms printed just right.

It will pay to check into Suttle's special service. We produce billing forms Made-to-Order (just as you want them). Our printing department prints bills for more telephone companies than any other printer in the country. It stands to reason we should be able to give you a more satisfactory job — we understand your needs.

You don't need to make up elaborate copy to get your bill printed. Just let us know your wishes .A sample of your old form with changes marked, or a rough pencil sketch to give us just a hint as to the ideas you have.

We will gladly quote prices for printing billing supplies. Just let us know what you want and how many. If you're in a big hurry just send your copy with an order. You will get prompt service and still be billed at the lowest price you would be quoted.

WRITE TO SUTTLE ABOUT YOUR REQUIREMENTS FOR BILLING SUPPLIES

See Your SUTTLE Catalog

Serving Independent Telephone Men Since 1910

Suttle EQUIPMENT CO.

LAWRENCEVILLE ILLINOIS

the BACK of the BOOK

By John G. Reynolds

"Men Only"

THIS IS A woman's world. Little by little the ladies have taken over prerogatives that were once considered exclusively male.

According to "*Long Lines*" magazine there is a man in Texas who feels this deeply and on a postcard to the telephone company he made a suggestion that apparently came straight from the heart.

Why not, he pleaded, invent a telephone "for men only." He then went on to explain that his wife was an expert in the art of non-stop conversation and that he never got a chance to use the phone. He wanted his own, personal line.

"Leave It To The Children"

HELEN WILCOX Marshall who writes a column called "Incidentally" for the "Florida Times Union" in Jacksonville, Fla., recently had a humorous story to tell about telephone operators and little children in particular. Quoting Columnist Marshall: "We knew a little girl once, or that is, she was little in the long ago days when in using the telephone one lifted the receiver and awaited for the feminine voice at the company exchange to say, 'Operator'. At this word, one then gave the desired number, which was put through by the operator. Well, this little girl attempted to make her first telephone call and came away frustrated. When asked what was the matter, the spratling replied that she didn't know but that every time she picked up the receiver a voice kept saying, '*hot potato, hot potato*'."

Message From New Hampshire

LINCOLN H. WELD recently passed along to the editors of "WE" a column from his old hometown newspaper, "The Mighty *Kearsarge Independent*, published in friendly Warner, New Hampshire, and read all over the free world — 5,785 readers every week." The columnist, who signs himself "Hank," expatiates on his theme as follows:

"Most of the talk around Conway these days is what will happen to us when our good old reliable fone exchange is shut down and the cut-over is made to this new-fangled dial system. Now they aint supposed to be no rong numbers rung with the dial system. They aint no waiting for no operator to get through ringing sum old deaf coot what is running a sawing machine out in the frunt yard and couldn't hear the angel Gabriel blowing a air horn, let alone a fone ringing in the kutchen . . ."

Hank alleges that the "feller" who names telephone exchanges is probably the half-brother of the chap who names Pullman cars.

Says he, "I admit like the telephone company says, the name of an exchange gut to be wun that is easy understood by ennybody in any part of the country no matter what kind of accent they use. I admit that some folks have trubble pernouncing nice easy names like Chocorua and Chatagee and Winnepesaukee and Damariscotta and Pemigawasset and Uncanoocook and Sagadahok and Cobosecontee and Matawamkeag and Whytopitlock and Memphramagog . . .

"Now I hear tell that the North Conway exchange is going to be called Fleetwood . . . (But) I think they should give us an exchange name that will tell something about what goes on in Conway like Pulpwood to tell about the lumbering, or Broken Leg to advertise the skiing . . ."

"A New Kind of Boss"

BRAKE SHOE NEWS recently had its say about "A New Kind of Boss." We liked it so well that we are herewith passing it along to you: —

"He's the hardest guy in the world to please.

"If you don't do a good job, he'll get someone else.

"He always lets you know what he wants. He'll decide what kind — and how much work — you do.

"He'll decide how much you get paid — but he's willing to pay you what you're worth to him.

"You do a good job and he'll back you to the limit.

"He doesn't give a hoot what you did yesterday; it's what you do today that counts.

"You can't rest on your laurels with this guy.

"He's always looking for new talents and new things — but he's loyal to old standbys, too.

"He never has any trouble getting people to work for him, tough as he is — and you've got to admit that he makes jobs for an awful lot of people.

"Your future is pretty much in his hands, and as the real boss of everybody from the office boy to president, he certainly expects a lot from us, and he gets it. And the beauty of the whole deal is that every one of us fits into this fellow's shoes as well as he does.

"The boss? Well, a good many bosses might fit the description.

"But the fellow we have in mind is known as the 'Customer.'"

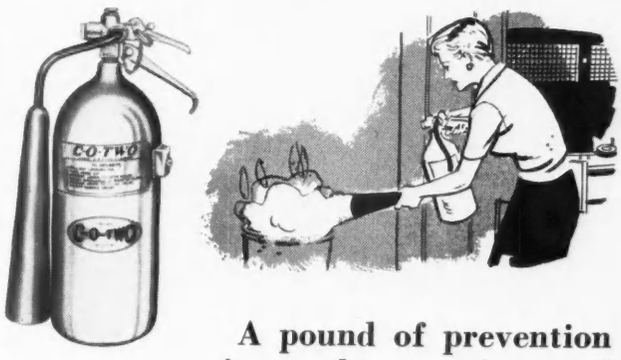
Automatic's pointers for plantmen and managers

Offer "telephone answering service" with the Electronic Secretary

Businessmen in "one-man" offices—such as realtors, doctors, lawyers, radio and television repair men—will appreciate your suggestion that they install an Electronic Secretary. They *need* "someone" to answer the telephone when they're out of the office!

The Electronic Secretary fills this need by receiving incoming calls, and transmitting to each caller a recorded message. A smooth, pleasant voice announces that "Mr. Jones is out," that he'll be back shortly, or tells where he can be reached. It invites the calling party to leave a message, which is then faithfully recorded on wire. When Mr. Jones returns, he can learn the nature of the call by simply playing back the message.

Such a service increases the value of the telephone to your business subscribers, and boosts your revenue. Call your Automatic Electric representative today for full particulars.



A pound of prevention is worth tons of regret!

C-O-Two fire extinguishers contain precious pounds of fire-killing carbon dioxide. This penetrating gas puts out a fire before it has a chance to turn valuable equipment into ashes. The moment the carbon dioxide is released from the tank, it pushes the air aside and quickly encircles the flames. The fire, gasping for air, dies instantly. C-O-Two is harmless to equipment, gives all-around protection. Whether you prefer the lighter, 5-pound units for operators' use or the larger cylinders, make sure you have enough C-O-Two's in your offices and plants.

Cat. No.	Capacity	Each
S-4153	5 pounds	$36.50
S-4154	10 pounds	57.50
S-4155	15 pounds	65.00

The curve of this bar speeds tamping

A simple but important design makes the Dicke curved-head tamping bar one of the handiest tools for tamping dirt around the pole. Crescent-shaped, it slides down easily, packing the earth right up to the pole; fits in narrow machined-drilled holes where other bars might bind. Curved head permits a longer, 7x1-5/16 inch tamping surface—packs the dirt down faster with fewer strokes. Be prepared for pole-line construction; order curved-head tamping bars from Automatic Electric today.

Cat. No.	Length of Handle	Each
S-2349	8 feet	$10.85
S-2350	10 feet	12.55

Prices are F.O.B. Chicago and subject to change without notice.

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"it says here we could produce MORE!"

We can't speak for Brer Rabbit . . . his production problem is a little out of our line.

But if you're not entirely satisfied with the revenue your present directory is producing, that *is* our business.

Independent telephone companies operating in over 4400 communities are now using our Complete Directory Service Plan. It has resulted in substantial increases in net revenue, modern directories and improved public relations.

We're almost certain we can improve the appearance, accuracy and return of *your* directory. Like to talk it over? Just write or call our nearest office.

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